

# APPENDIX B:

# WASTEWATER

## BUSINESS CASE EVALUATIONS



### 92 PROJECTS

27 FUTURE PLANNED  
50 ACTIVE  
4 PENDING CLOSEOUT  
7 CLOSED  
*4 RECLASSIFIED*



### 5-YEAR CIP

\$762 MILLION



### 10-YEAR OUTLOOK

\$1.38 BILLION



### FOR MORE: SECTION 6

FIND THE ONE-PAGERS FOR  
WASTEWATER PROJECTS SEE  
SECTION 6 IN THE CIP REPORT.

**Project Title:** WRRF Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery

**Project Status:** Project Execution - Construction

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** WRRF

**Class Lvl 3:** Primary Treatment

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



**Project Engineer/Manager:** Nicolas Nicolas

**Director:** Philip Kora

**Managing Dept.:** WW Construction Eng

**Date Original Business Case Prepared:** 6/23/2005

**Year Project Added to CIP:** 1999

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** WRRF

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

Rehabilitation for meeting NPDES Permit and NEC requirements

**Scope of Work/Project Alternatives:**

The work to be completed under this project will include installing ventilation and atmospheric control for the pipe gallery, providing new lights and installing new fire alarm system. Rehabilitation of the twelve rectangular primary clarifiers and rehabilitation of circular primary clarifiers 15 and 16 are also part of the scope of this project.

**Other Important Info:**

Challenges: N/A - Active

**Primary Driver:** N/A - Active

**Driver Explanation:**

N/A - Active

**Project Title:** WRRF Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery

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**Scoring**

**Project Manager Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Risk Committee Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Project Title:** WRRF Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

**Phase Budget:** Wastewater

**Start Date:** 7/18/2016

**Phase Status:**

**End Date:** 1/30/2021

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$1,018	\$799	\$799	\$219	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	7/18/2016	1/30/2021
Capital Delivery Salary	7/18/2016	1/30/2021
Contractual Professional Services	7/18/2016	1/30/2021
Other Capital Improvement Costs	7/18/2016	1/30/2021
Capitalized Interest	7/18/2016	1/30/2021

**Project Title:** WRRF Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery

**Phase:** Construction Assistance # 1 (1802474, CS-1432A, CS-1484, CS-291)

**Phase Title:** Construction Assistance # 1 (1802474, CS-1432A, CS-1484, CS-291)

**Phase Budget:** Wastewater

**Start Date:** 7/1/2016

**Phase Status:**

**End Date:** 12/31/2020

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Construction Assistance # 1 (1802474, CS-1432A, CS-1484, CS-291)</b>	\$769	\$769	\$769	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (1802474)	7/18/2016	12/31/2020
Design/Engineering (CS-1432A)	7/1/2016	6/28/2019
Design/Engineering (CS-1484)	7/1/2016	6/30/2020
Design/Engineering (CS-291)	1/1/2020	1/31/2020

**Project Title:** WRRF Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery

**Phase:** Construction (Build) # 1 (PC-757)

**Phase Title:** Construction (Build) # 1 (PC-757)

**Phase Budget:** Wastewater

**Start Date:** 7/18/2016

**Phase Status:**

**End Date:** 1/30/2021

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Construction (Build) # 1 (PC-757)</b>	\$51,478	\$51,478	\$51,478	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Construction (PC-757)	7/18/2016	1/30/2021

**Project Title:** WRRF Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery

**Phase:** Miscellaneous

**Phase Title:** Miscellaneous

**Phase Budget:** Wastewater

**Start Date:** 5/1/2010

**Phase Status:**

**End Date:** 6/30/2021

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	<b>Total Costs</b>	<b>Actual Costs</b>	<b>Prior FYs</b>
<b>Miscellaneous</b>	\$1,701	\$1,701	\$1,701

**Phase Dates**

<b>Activity Name</b>	<b>Start Date</b>	<b>End Date</b>
Pre-CAFR Actuals	5/1/2010	6/30/2015
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** WRRF Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2018	\$41,055	\$10,848	\$12,097	\$20,990	\$7,968	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$51,903
2019	\$30,811	\$10,243	\$12,983	\$16,107	\$8,671	\$6,033	\$0	\$0	\$0	\$0	\$0	\$0	\$54,037
2020	\$11,036	\$0	\$25,098	\$18,724	\$7,982	\$3,054	\$0	\$0	\$0	\$0	\$0	\$0	\$54,858
2021	\$3,775	\$0	\$0	\$45,069	\$6,225	\$3,775	\$0	\$0	\$0	\$0	\$0	\$0	\$55,069
2022	\$0	\$0	\$13,124	\$19,970	\$18,091	\$2,876	\$0	\$0	\$0	\$0	\$0	\$0	\$54,061

**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$54,968,400	\$54,748,738	\$219,663	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Description of CIP Changes:**

The construction cash flow projection was adjusted based on the latest schedule update/actual progress of work and provided to AECOM team.



**Project Title:** WRRF PS No. 2 Pumping Improvements - Phase 1

**Project Status:** Project Execution - Construction

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** WRRF

**Class Lvl 3:** Primary Treatment

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



**Project Engineer/Manager:** Vinod Sharma

**Director:** Philip Kora

**Managing Dept.:** WW Construction Eng

**Date Original Business Case Prepared:**  
4/30/2003

**Year Project Added to CIP:** 2003

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** WRRF

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

Correct drifting issues of pumps and meet long term wet weather capacity needs

**Scope of Work/Project Alternatives:**

This project involves evaluating and recommending alternatives for providing more reliable pumping capacity at Pump Station No. 2 for Pumps Nos. 11 and 14.

**Other Important Info:**

Challenges: Unable to improve the drift issues experienced at pump station 2.

**Primary Driver:** N/A - Active

**Driver Explanation:**

N/A - Active

**Project Title:** WRRF PS No. 2 Pumping Improvements - Phase 1

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**Scoring****Project Manager Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Risk Committee Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Project Title:** WRRF PS No. 2 Pumping Improvements - Phase 1

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

<b>Phase Budget:</b> Wastewater	<b>Start Date:</b> 7/20/2010
<b>Phase Status:</b> Project Execution	<b>End Date:</b> 8/20/2021
<b>Cost Allocation:</b> CTA	<b>Fund:</b> N/A - Not Applicable
<b>Funding Source:</b> Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b> No
	<b>Tot. Federal Loan Amount:</b> \$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 3	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b> 9/17/2018	<b>Cost Est. Prepared By:</b> P. Kora

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$296	\$232	\$232	\$64	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	7/20/2010	8/20/2021
Capital Delivery Salary	7/20/2010	8/20/2021
Contractual Professional Services	7/20/2010	8/20/2021
Other Capital Improvement Costs	7/20/2010	8/20/2021
Capitalized Interest	7/20/2010	8/20/2021

**Project Title:** WRRF PS No. 2 Pumping Improvements - Phase 1

**Phase:** Design & Construction Assistance # 1 (CS-1444, CS-255)

**Phase Title:** CS-1444 Pump Station No. 2 Pumping Improvements

<b>Phase Budget:</b> Wastewater	<b>Start Date:</b> 7/20/2010
<b>Phase Status:</b> Project Execution	<b>End Date:</b> 8/20/2021
<b>Cost Allocation:</b> CTA	<b>Fund:</b> N/A - Not Applicable
<b>Funding Source:</b> Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b> Yes
	<b>Tot. Federal Loan Amount:</b> \$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 2	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b> 10/2/2017	<b>Cost Est. Prepared By:</b> Ali Khraizat

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Design &amp; Construction Assistance # 1 (CS-1444, CS-255)</b>	\$241	\$241	\$241	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (CS-255)	7/20/2010	8/20/2021
Design/Engineering (CS-1444)	7/1/2015	6/29/2018
Design/Engineering (MISC)	7/1/2015	6/30/2016

**Project Title:** WRRF PS No. 2 Pumping Improvements - Phase 1

**Phase:** Construction (Build) # 1 (PC-795)

**Phase Title:** PC-795, Pump Station No. 2 Pumping Improvements

<b>Phase Budget:</b> Wastewater	<b>Start Date:</b> 10/17/2016
<b>Phase Status:</b> Project Execution	<b>End Date:</b> 8/20/2021
<b>Cost Allocation:</b> CTA	<b>Fund:</b> N/A - Not Applicable
<b>Funding Source:</b> Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b> Yes
	<b>Tot. Federal Loan Amount:</b> \$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 1	<b>Cost Est. Source:</b> Contract
<b>Cost Est. Date:</b> 7/31/2019	<b>Cost Est. Prepared By:</b> PMA

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Construction (Build) # 1 (PC-795)</b>	\$2,924	\$2,043	\$2,043	\$881	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Construction (PC-795)	10/17/2016	8/20/2021

**Project Title:** WRRF PS No. 2 Pumping Improvements - Phase 1

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2018	\$1,920	\$1,157	\$1,304	\$616	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,533
2019	\$3,075	\$109	\$599	\$2,454	\$621	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,783
2020	\$1,222	\$0	\$322	\$2,268	\$1,222	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,812
2021	\$0	\$0	\$0	\$1,912	\$1,860	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,772
2022	\$0	\$0	\$215	\$1,589	\$210	\$1,326	\$0	\$0	\$0	\$0	\$0	\$0	\$3,340

**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$3,462,878	\$2,517,234	\$945,643	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Description of CIP Changes:**

The project is delayed because of the field performance issues associated with new pump # 11.

**Project Title:** WRRF PS #1 Rack & Grit and MPI Sampling Station 1 Improvements

**Project Status:** Closed

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** WRRF

**Class Lvl 3:** Primary Treatment

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**


**Project Engineer/Manager:** Partho Ghosh

**Director:** Philip Kora

**Managing Dept.:** WW Construction Eng

**Date Original Business Case Prepared:**  
 3/17/2008

**Year Project Added to CIP:** 2008

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** WRRF

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

Rehabilitate aging rack and grit system for efficient removal of grit to reduce loading on downstream process areas

**Scope of Work/Project Alternatives:**

The scope of work includes modifications and improvements of the existing grit and screening handling system at Pump Station 1 and MPI Sampling Station 1.

**Other Important Info:**

Challenges: N/A - Active

**Primary Driver:** N/A - Active

**Driver Explanation:**

N/A - Active

**Project Title:** WRRF PS #1 Rack & Grit and MPI Sampling Station 1 Improvements

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**Scoring****Project Manager Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Risk Committee Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	



**Project Title:** WRRF PS #1 Rack & Grit and MPI Sampling Station 1 Improvements

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	11/18/2013
<b>Phase Status:</b>	Project Execution	<b>End Date:</b>	9/30/2021
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	No
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 3	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b> 9/17/2018	<b>Cost Est. Prepared By:</b> P. Kora

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$2,074	\$2,074	\$2,074	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	11/18/2013	9/30/2021
Capital Delivery Salary	11/18/2013	9/30/2021
Contractual Professional Services	11/18/2013	9/30/2021
Other Capital Improvement Costs	11/18/2013	9/30/2021
Capitalized Interest	11/18/2013	9/30/2021

**Project Title:** WRRF PS #1 Rack & Grit and MPI Sampling Station 1 Improvements

**Phase:** Design/Engineering (CS-189 / CS-1432A / CS-1433 / 1903449)

**Phase Title:** Design/Engineering (CS-189 / CS-1432A / CS-1433 / 1903449)

**Phase Budget:** Wastewater

**Start Date:** 5/1/2010

**Phase Status:**

**End Date:** 6/30/2020

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22
<b>Design/Engineering (CS-189 / CS-1432A / CS-1433 / 1903449)</b>	\$4,805	\$4,805	\$4,805	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering CAFR Actuals	7/1/2017	6/30/2020
Design/Engineering PC-789 Pre-CAFR	5/1/2010	6/30/2015

**Project Title:** WRRF PS #1 Rack & Grit and MPI Sampling Station 1 Improvements

**Phase:** Construction (PC-789, CON-250)

**Phase Title:** PC-789 Pump Station 1 Rack & Grit and MPI Sampling Station 1 Improvements

<b>Phase Budget:</b> Wastewater	<b>Start Date:</b> 5/1/2010
<b>Phase Status:</b> Project Execution	<b>End Date:</b> 9/30/2021
<b>Cost Allocation:</b> CTA	<b>Fund:</b> N/A - Not Applicable
<b>Funding Source:</b> Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b> Yes
<b>Tot. Federal Loan Amount:</b> \$0.00	

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 1	<b>Cost Est. Source:</b> Contract
<b>Cost Est. Date:</b> 7/31/2019	<b>Cost Est. Prepared By:</b> PMA

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Construction (PC-789, CON-250)</b>	\$21,580	\$21,580	\$21,580	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Construction (CON-250)	11/18/2013	9/30/2021
Construction PC-789 Pre-CAFR & CAFR	5/1/2010	6/30/2018

**Project Title:** WRRF PS #1 Rack & Grit and MPI Sampling Station 1 Improvements

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2018	\$5,304	\$2,303	\$2,652	\$2,652	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$21,494
2019	\$3,055	\$20,944	\$3,648	\$2,752	\$303	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$27,647
2020	\$869	\$0	\$24,505	\$1,824	\$869	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$27,198
2021	\$0	\$0	\$0	\$26,502	\$1,771	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$28,273
2022	\$0	\$0	\$3,543	\$1,997	\$5,495	\$12,260	\$0	\$0	\$0	\$0	\$0	\$0	\$23,295

**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$28,459,566	\$28,459,566	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Description of CIP Changes:**

GLWA has decided to delete the grit system rehab work of channels 2 and 3 from the project. And the anticipated credit amount is reflected in the revised cash flow projection. Final completion date may need to be extended again because the outstanding fire alarm work was impacted by COVID-19

**Project Title:** WRRF PS No. 2 Improvements Phase II

**Project Status:** Future Planned - Within 5 Year Plan

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** WRRF

**Class Lvl 3:** Primary Treatment

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☒ **Predecessor Project(s)**



Main Raw Sewage Pumps at Pump Station 2

**Project Engineer/Manager:** Chris Wilson

**Director:** Dan Alford

**Managing Dept.:** WW Design Eng

**Date Original Business Case Prepared:**  
7/27/2016

**Year Project Added to CIP:** 2014

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** WRRF

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

This project will improve the pump reliability of PS-2 to meet the NPDES permit flow capacity requirements.

**Scope of Work/Project Alternatives:**

The preliminary scope of this project is to provide basis of design (study) report for rehabilitation/rebuilding plan for existing pump and its control and any associated equipment. The study will look into the addition of VFD to the three constant speed pumps. The study will not be limited to increasing the capacity of existing pumps to meet the long-term goal for wet weather capacity. The Scope also include: Provide engineering design for rehabilitation/rebuilding of the pumps, replacement of HVAC System, I&C Improvements (i.e. automation, etc.), structural, architectural and electrical improvement, provide design for any recommendation made by the study report. The services during construction are: provide construction assistance, such as review of shop drawings, respond to RFIs, attending progress meetings, verify and assist GLWA with any changes requested by the contractor, etc.

Construction will follow after the completion of design.

**Other Important Info:**

Challenges: Shutdowns of the pumps to be rehabilitated will require co-ordination with operations and careful planning to meet NPDES permit requirements for the flow capacity during the construction phase.

Project History: Pump Station No. 2 was built in 1994. Seven out of eight pumps were running since 1994. These pumps never attained the design capacity due to an unidentified drifting problem. The eighth pump (Pump No. 10) was installed under PC-740 with a modified suction elbow that provided better pumping capacity. The VFDs for five (5) pumps were also replaced in 2005 under PC-744 contract.

A new impeller was installed on Pump No. 9 and a rebuilt impeller was installed on Pump No. 16 in 2008, which provided sufficient improvements in pumping capacity. To mitigate the declining of pumping capacity, DWSD initiated a CS-1444/PC-795 PS-2 Pumping Improvements project to rehabilitate Pump No. 11 and Pump No. 14 to solidify the long-term wet weather capacity of 1700 MGD. It was recommended to rehabilitate the remaining pumps with energy efficient, and more reliable control systems that require less maintenance.

**Project Title:** WRRF PS No. 2 Improvements Phase II

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**Primary Driver:** 2 - Performance

**Driver Explanation:**

The advantage of rehabilitating Pump Station No. 2 is to increase the long-term rated capacity, operational efficiency, and reliability of the pumping system. Replacement of the existing VFDs and adding new VFDs to constant speed pumps would also provide

**Project Title:** WRRF PS No. 2 Improvements Phase II**Scoring****Project Manager Weighted Score:** 77.40

Criteria Name	Score	Comment
Condition	5	Asset equipment remain the same, Condition remains the same
Performance (Service Level/Reliability)	4	Asset equipment remain the same, Performance remains the same
Regulatory (Environmental/Legal)	4	Asset equipment remain the same, Regulatory issues remain the same
Operations and Maintenance	3	Asset equipment remain the same, O&M risks remain the same
Health and Safety	4	Asset equipment remain the same, Public Health risks remain the same
Public Benefit	3	Asset equipment remain the same, Public Benefit risks remain the same
Financial	2	Asset equipment remain the same, Financial risks remain the same
Efficiency and Innovation	2	Asset equipment remain the same, Efficiency and Innovation remain the same

**Risk Committee Weighted Score:** 77.40

Criteria Name	Score	Comment
Condition	5	Scores carried over from previous year
Performance (Service Level/Reliability)	4	Scores carried over from previous year
Regulatory (Environmental/Legal)	4	Scores carried over from previous year
Operations and Maintenance	3	Scores carried over from previous year
Health and Safety	4	Scores carried over from previous year
Public Benefit	3	Scores carried over from previous year
Financial	2	Scores carried over from previous year
Efficiency and Innovation	2	Scores carried over from previous year

**Project Title:** WRRF PS No. 2 Improvements Phase II

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

**Phase Budget:** Wastewater

**Start Date:** 5/7/2020

**Phase Status:**
**End Date:** 9/29/2031

**Cost Allocation:**
**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**
**Cost Est. Class:**
**Cost Est. Source:**
**Cost Est. Date:**
**Cost Est. Prepared By:**
**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$350	\$2	\$2	\$0	\$0	\$28	\$28	\$29	\$0	\$87	\$141

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2024	9/29/2031
Capital Delivery Salary	7/1/2024	9/29/2031
Professional Services (CS-272 - 72007B.01 / 72014A.01)	5/7/2020	5/6/2022



**Project Title:** WRRF PS No. 2 Improvements Phase II

**Phase:** Study # 1

**Phase Title:** Study # 1

**Phase Budget:** Wastewater

**Start Date:** 7/1/2024

**Phase Status:**
**End Date:** 6/30/2031

**Cost Allocation:**
**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**
**Cost Est. Class:**
**Cost Est. Source:**
**Cost Est. Date:**
**Cost Est. Prepared By:**
**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Study # 1</b>	\$10,387	\$0	\$0	\$0	\$0	\$2,304	\$2,304	\$2,304	\$0	\$6,912	\$2,821

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	7/1/2024	6/30/2031

**Project Title:** WRRF PS No. 2 Improvements Phase II

**Phase:** Construction (Build) # 1

**Phase Title:** Construction (Build) # 1

**Phase Budget:** Wastewater

**Start Date:** 7/1/2027

**Phase Status:**

**End Date:** 9/29/2031

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY25	FY26	FY27	5 Year Total	FY28+
<b>Construction (Build) # 1</b>	\$56,264	\$0	\$0	\$0	\$0	\$0	\$0	\$45,484

**Phase Dates**

Activity Name	Start Date	End Date
Construction	7/1/2027	9/29/2031

**Project Title:** WRRF PS No. 2 Improvements Phase II

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2018	\$10,800	\$600	\$1,700	\$4,800	\$3,700	\$0	\$0	\$0	\$0	\$0	\$0	\$10,800
2019	\$19,025	\$7	\$0	\$515	\$115	\$9,294	\$9,101	\$3,055	\$0	\$0	\$0	\$22,087
2020	\$10,674	\$0	\$0	\$0	\$684	\$711	\$611	\$8,668	\$10,925	\$0	\$0	\$21,599
2021	\$3,665	\$0	\$1	\$0	\$0	\$0	\$471	\$2,245	\$949	\$30,384	\$0	\$34,050
2022	\$923	\$0	\$1	(\$1)	\$10	\$0	\$0	\$0	\$461	\$461	\$2,545	\$13,797

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$67,002,175	\$2,176	\$0	\$0	\$2,333,333	\$2,333,333	\$2,333,333	\$0	\$6,999,999	\$48,447,508

**Description of CIP Changes:**

Added additional detail and re-scored project

**Project Title:** WRRF PS No. 1 Improvements

**Project Status:** Project Execution - Design

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** WRRF

**Class Lvl 3:** Primary Treatment

☐ **Project New to CIP**

- ☒ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



Pump Station 1

**Project Engineer/Manager:** Chris Wilson

**Director:** Dan Alford

**Managing Dept.:** WW Design Eng

**Date Original Business Case Prepared:**  
 4/13/2017

**Year Project Added to CIP:** 2016

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** WRRF

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

Condition assessment and rehabilitation of all pumps at Pump Station No. 1 to increase efficiency and reliability. Rehabilitate the pump station to extend life.

**Scope of Work/Project Alternatives:**

The study/design work will identify all major parts including impellers and wear rings to be refurbished for each pump and all related appurtenances. The construction services will provide rehabilitation and/or replacement as determined in the study and design along with the sequencing of pump shutdown throughout the rehabilitation period. Investigation and evaluation of all the inlet gates, outlet gates and associated actuators, Motor Control Centers (MCCs) and other related equipment, HVAC system, Control System and provide recommendation and design for rehabilitation or replacement are also part of the scope.

**Other Important Info:**

Challenges: Maintaining the adequate pumping capacity during construction.

Project History: GLWA operate two raw sewage pumping stations: PS-1 and PS-2, at the Water Resources Recovery Facility. Raw wastewater (influent) from the collection system flows to the Influent Pumping Station through the Detroit River Interceptor (16 feet in diameter), Oakwood Interceptor (12.5 feet in diameter) and North Interceptor East Arm (NIEA). The main Influent Pumping Station No. 1 (PS-1) was constructed in the 1930s. PS-1 has eight constant speed pumps of various capacities (six were installed in the 1940s and two more were added in 1956) and has a Firm Capacity (largest pump out of service) of 1,225 MGD during wet weather event. The Influent Pumping Station No. 2 (PS-2) has eight raw sewage pumps (combination of variable and constant speed pumps) with a Firm Capacity of 805 MGD during wet weather event. The pumps at PS-1 were rehabilitated in 2004 and 2005 under PC-744 project (DWP 1007).

**Primary Driver:** 1 - Condition

**Project Title:** WRRF PS No. 1 Improvements

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**Driver Explanation:**

The station has exceeded its service life and should be rehabilitated. The station plays a key role in plant operations and if left untouched would decrease the ability for the plant to process wastewater.

**Project Title:** WRRF PS No. 1 Improvements

**Scoring**
**Project Manager Weighted Score:** 78.60

Criteria Name	Score	Comment
Condition	5	Asset has exceeded its design service life and requires excessive maintenance. Failure of this asset could result in diminished capacity.
Performance (Service Level/Reliability)	4	Main Lift Pumps have been down for parts and rebuilds
Regulatory (Environmental/Legal)	4	Relatively high risk of causing Permit violations and Health risks to staff/public
Operations and Maintenance	4	High levels of O/M required to keep in service will only marginally ensure future stable/proper operation
Health and Safety	4	Canceling project would pose a significant public safety hazard. Some potential for significant regulatory violations
Public Benefit	3	Project part of GLWA master plan.
Financial	2	
Efficiency and Innovation	3	Project attempts to right-size system. Small operational efficiencies and increasing revenue/savings are projected

**Risk Committee Weighted Score:** 78.60

Criteria Name	Score	Comment
Condition	5	Scores carried over from previous year
Performance (Service Level/Reliability)	4	Scores carried over from previous year
Regulatory (Environmental/Legal)	4	Scores carried over from previous year
Operations and Maintenance	4	Scores carried over from previous year
Health and Safety	4	Scores carried over from previous year
Public Benefit	3	Scores carried over from previous year
Financial	2	Scores carried over from previous year
Efficiency and Innovation	3	Scores carried over from previous year

**Project Title:** WRRF PS No. 1 Improvements

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

<b>Phase Budget:</b> Wastewater	<b>Start Date:</b> 5/2/2019
<b>Phase Status:</b> Future Planned Start	<b>End Date:</b> 3/1/2028
<b>Cost Allocation:</b> CTA	<b>Fund:</b> N/A - Not Applicable
<b>Funding Source:</b> Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b> No
	<b>Tot. Federal Loan Amount:</b> \$0.00

**Phase Comments/Description:**
**Cost Est. Class:** Class 3

**Cost Est. Source:**
**Cost Est. Date:**
**Cost Est. Prepared By:**
**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$442	\$151	\$151	\$120	\$25	\$25	\$25	\$25	\$25	\$125	\$45

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	5/2/2019	3/1/2028
Capital Delivery Salary	5/2/2019	3/1/2028
Professional Services (CS-272 - 72007B.02 / 72007B.07 / 72021A.01)	8/17/2020	9/30/2021
Contractual Professional Services	5/2/2019	3/1/2028
Other Capital Improvement Costs	5/2/2019	3/1/2028
Capitalized Interest	5/2/2019	3/1/2028

**Project Title:** WRRF PS No. 1 Improvements

**Phase:** Study & Design & Construction Assistance # 1 (CS-102)

**Phase Title:** Rehabilitation of Main Lift Pumps at Pump Station No. 1

<b>Phase Budget:</b> Wastewater	<b>Start Date:</b> 5/2/2019
<b>Phase Status:</b> Future Planned Start	<b>End Date:</b> 3/1/2028
<b>Cost Allocation:</b> CTA	<b>Fund:</b> N/A - Not Applicable
<b>Funding Source:</b> Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b> Yes
<b>Tot. Federal Loan Amount:</b> \$0.00	

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 4	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b> 10/1/2017	<b>Cost Est. Prepared By:</b> Ali Khraizat

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Study &amp; Design &amp; Construction Assistance # 1 (CS-102)</b>	\$4,420	\$3,340	\$3,340	\$379	\$100	\$100	\$100	\$100	\$100	\$500	\$200

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (CS-102)	5/2/2019	3/1/2028



**Project Title:** WRRF PS No. 1 Improvements

**Phase:** Construction (Build) # 1

**Phase Title:** Rehabilitation of Main Lift Pumps at Pump Station No. 1

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	8/1/2022
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	3/1/2028
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 3	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Construction (Build) # 1</b>	\$65,178	\$0	\$0	\$100	\$7,974	\$10,011	\$10,011	\$10,011	\$10,011	\$48,020	\$17,058

**Phase Dates**

Activity Name	Start Date	End Date
Construction	8/1/2022	3/1/2028

**Project Title:** WRRF PS No. 1 Improvements

**Phase:** Miscellaneous

**Phase Title:** Miscellaneous

**Phase Budget:** Wastewater

**Start Date:** 7/1/2020

**Phase Status:**

**End Date:** 6/30/2021

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	<b>Total Costs</b>	<b>Actual Costs</b>	<b>Prior FYs</b>
<b>Miscellaneous</b>	\$0	\$0	\$0

**Phase Dates**

<b>Activity Name</b>	<b>Start Date</b>	<b>End Date</b>
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** WRRF PS No. 1 Improvements

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2018	\$13,129	\$600	\$5,350	\$5,125	\$2,054	\$0	\$0	\$0	\$0	\$0	\$0	\$13,129
2019	\$23,401	\$0	\$500	\$1,800	\$2,462	\$9,394	\$9,245	\$719	\$0	\$0	\$0	\$24,120
2020	\$21,733	\$0	\$498	\$1,803	\$2,325	\$8,424	\$8,370	\$811	\$84	\$0	\$0	\$22,315
2021	\$25,841	\$0	\$6	\$929	\$645	\$551	\$8,532	\$12,772	\$3,341	\$0	\$0	\$26,776
2022	\$33,815	\$0	\$6	\$1,278	\$623	\$3,061	\$7,987	\$8,009	\$7,199	\$7,559	\$21,461	\$68,709

**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$70,041,517	\$3,491,519	\$600,000	\$8,100,000	\$10,136,346	\$10,136,346	\$10,136,346	\$10,136,346	\$48,645,384	\$17,304,614

**Description of CIP Changes:**

Refined construction cost and schedule based on Design Decisions

**Project Title:** WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements

**Project Status:** Project Execution - Design

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** WRRF

**Class Lvl 3:** Primary Treatment

☐ **Project New to CIP**

- ☒ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



Pump Station 2, Grit channels

**Project Engineer/Manager:** Chris Wilson

**Director:** Dan Alford

**Managing Dept.:** WW Design Eng

**Date Original Business Case Prepared:** 10/12/2016

**Year Project Added to CIP:** 2016

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** WRRF

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

Replacement of all bar racks and associated equipment and addition of fine screens (1/4 inch) for more reliable and efficient screenings removal. Addition of screenings washing and compaction to reduce truck traffic and cost of disposal. Improvement of grit collection system with more efficient, state-of-the-art, grit collection and pumping system, and grit washing and classification to reduce truck traffic and cost of disposal. Improvements to the grit screenings and grit removal and handling systems will improve the performance of all downstream processes, reduce maintenance costs and increase life of downstream equipment.

**Scope of Work/Project Alternatives:**

The work consists of evaluation, design and construction of the replacement of the existing bar racks and ancillary equipment and gates, addition of new fine screens (1/4 inch) downstream of the bar racks, addition of screenings washing and compaction, inclusion of stacked tray grit removal or other technology within the aerated grit tank and grit washing and/or classification. Work also includes the upgrade and expansion as necessary of the existing building that houses the screens and the screenings and grit handling and load out, including all lighting, HVAC, plumbing, electrical, and architectural work. New instrumentation and controls for operations and monitoring will also be provided. System shall be designed to meet long-term wet weather capacity requirements at PS2.

**Other Important Info:**

\*Innovation note: Include new grit removal equipment rather than replacement in kind (cyclonic). The CIP Project Proposal – CIP 1314 – “Replacement of Bar Racks at Pump Station No. 2” and CIP Project Proposal – CIP 1223 – “Rehabilitation of Grit and Screening System at PS-2 and Rehabilitation of Sampling Sites at WWTP” are combined into one project under CIP 1314. That combined new budget for CIP 1314 (CIP 1223 and 1314) has a total amount of \$11,617,000. The design of “Rehabilitation of Sampling Sites” is completed and will be bid separately for construction. The previous design for Bar Rack System by Sigma under As Needed Engineering Services Contact task order will not proceed for construction as designed. An engineering decision to have a fresh look and start new study, design and construction project through this CIP project will proceed. The original budget for CIP-1314 is \$3.667M. The \$6.0M CIP budget transfer was made from CIP-1223. The new revised CIP-1314 budget is \$9.667

Challenges: Maintaining the MDEQ-NPDES required capacity during the construction phase of the project.

Project History: The Pump Station No. 2 Rack and Grit

**Project Title:** WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements

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Collection system have been in service for almost twenty years. The equipment is near the end of its useful life. Improper transport of collected screenings has been ongoing problem and rags and other floatable materials are not screened thoroughly. The condition and reliability of the Pump Station No. 2 Grit System was inspected, and the grit crane was upgraded in 2002 by PC-744/DWP-1006.

- ? The HVAC system was found in good condition but needs some rehabilitation due to its ending life cycle.
- ? Modifications are needed to the existing Grit removal system because of the draining issues. Grit Chambers cannot be emptied due to clogged drains.
- ? Grit carry over cause deterioration of the downstream process and equipment
- ? Rehabilitation/Replacement of screening belt since the equipment is nearing to its useful life.
- ? Rehabilitation of Grit Channel Drain Gate stems.

The bar screen foundations, screen frames, and conveyance chutes in PS-2 have been in service for approximately twenty years.

**Primary Driver:** 2 - Performance

**Driver Explanation:**

Plant operations report on the failure of shear pins and accelerated wearing and tearing of the bar racks causing downtime for the maintenance and violation of the permit

**Project Title:** WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements

### Scoring

**Project Manager Weighted Score:** 76.60

Criteria Name	Score	Comment
Condition	3	Asset equipment remain the same, Condition remains the same
Performance (Service Level/Reliability)	4	Asset equipment remain the same, Performance remains the same
Regulatory (Environmental/Legal)	4	Asset equipment remain the same, Regulatory issues remain the same
Operations and Maintenance	4	Asset equipment remain the same, O&M risks remain the same
Health and Safety	3	Asset equipment remain the same, Public Health risks remain the same
Public Benefit	3	Asset equipment remain the same, Public Benefit risks remain the same
Financial	3	Asset equipment remain the same, Financial risks remain the same
Efficiency and Innovation	3	Project will add finer screenings removal and include improved waste handling. We also intend to use new technology for grit removal (baffled vortex tanks)

**Risk Committee Weighted Score:** 75.70

Criteria Name	Score	Comment
Condition	3	Scores carried over from previous year
Performance (Service Level/Reliability)	4	Scores carried over from previous year
Regulatory (Environmental/Legal)	4	Scores carried over from previous year
Operations and Maintenance	4	Scores carried over from previous year
Health and Safety	3	Scores carried over from previous year
Public Benefit	3	Scores carried over from previous year
Financial	3	Scores carried over from previous year
Efficiency and Innovation	1	Scores carried over from previous year

**Project Title:** WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

<b>Phase Budget:</b> Wastewater	<b>Start Date:</b> 6/1/2020
<b>Phase Status:</b> Future Planned Start	<b>End Date:</b> 3/2/2028
<b>Cost Allocation:</b> CTA	<b>Fund:</b> N/A - Not Applicable
<b>Funding Source:</b> Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b> No
<b>Tot. Federal Loan Amount:</b> \$0.00	

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 4	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$403	\$123	\$123	\$34	\$34	\$35	\$34	\$34	\$34	\$174	\$70

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	6/1/2020	3/2/2028
Capital Delivery Salary	6/1/2020	3/2/2028
Professional Services (CS-272 - 72021A.02)	8/17/2020	12/31/2020

**Project Title:** WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements

**Phase:** Study & Design & Construction Assistance # 1 (1904337)

**Phase Title:** Replacement of Bar Racks at Pump Station No.2

<b>Phase Budget:</b> Wastewater	<b>Start Date:</b> 6/1/2020
<b>Phase Status:</b> Future Planned Start	<b>End Date:</b> 3/2/2028
<b>Cost Allocation:</b> CTA	<b>Fund:</b> N/A - Not Applicable
<b>Funding Source:</b> Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b> Yes
<b>Tot. Federal Loan Amount:</b> \$0.00	

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 4	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b> 10/2/2017	<b>Cost Est. Prepared By:</b> Ali Khraizat

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Study &amp; Design &amp; Construction Assistance # 1 (1904337)</b>	\$14,020	\$1,385	\$1,385	\$2,965	\$2,226	\$1,242	\$1,238	\$1,238	\$1,238	\$7,185	\$2,484

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (1904337)	6/1/2020	3/2/2028



**Project Title:** WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements

**Phase:** Construction (Build) # 1

**Phase Title:** Replacement of Bar Racks at Pump Station No.2

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	6/15/2023
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	3/2/2028
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 4	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b> 10/2/2017	<b>Cost Est. Prepared By:</b> Ali Khraizat

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Construction (Build) # 1</b>	\$74,346	\$0	\$0	\$200	\$11,826	\$11,830	\$11,830	\$11,830	\$47,517	\$26,828

**Phase Dates**

Activity Name	Start Date	End Date
Construction	6/15/2023	3/2/2028

**Project Title:** WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements

**Phase:** Miscellaneous

**Phase Title:** Miscellaneous

**Phase Budget:** Wastewater

**Start Date:** 7/1/2020

**Phase Status:**

**End Date:** 6/30/2021

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2018	\$9,667	\$650	\$2,900	\$3,300	\$2,817	\$0	\$0	\$0	\$0	\$0	\$0	\$9,667
2019	\$11,749	\$0	\$7	\$402	\$1,980	\$2,404	\$6,956	\$8,814	\$0	\$0	\$0	\$20,563
2020	\$17,781	\$0	\$6	\$269	\$1,329	\$2,039	\$6,306	\$7,838	\$49	\$0	\$0	\$17,836
2021	\$67,697	\$0	\$1	\$256	\$3,098	\$7,546	\$2,120	\$20,899	\$34,034	\$8,642	\$0	\$76,596
2022	\$60,637	\$0	\$1	\$5	\$2,323	\$2,303	\$6,987	\$18,173	\$18,123	\$15,052	\$13,263	\$76,229

**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$88,770,867	\$1,509,443	\$3,000,000	\$2,461,426	\$13,104,204	\$13,104,204	\$13,104,204	\$13,104,204	\$54,878,239	\$29,383,187

**Description of CIP Changes:**

Updated status and pictures

**Project Title:** WRRF Rehabilitation of Ferric Chloride Feed System in PS-1 and Complex B Sludge Lines

**Project Status:** Project Execution - Construction

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** WRRF

**Class Lvl 3:** Primary Treatment

☐ **Project New to CIP**

- ☒ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☒ **Predecessor Project(s)**



Ferric Chloride Storage and Containment Area

**Project Engineer/Manager:** Chris Breinling

**Director:** Dan Alford

**Managing Dept.:** WW Construction Eng

**Date Original Business Case Prepared:** 7/27/2016

**Year Project Added to CIP:** 2017

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** WRRF

**Funds and Cost Center:** Wastewater - 5421-892211

#### Problem Statement:

The Ferric Chloride Systems at PS-1 is used to reduce phosphorus to the required permit levels. The system, which includes chemical storage tanks, secondary containment, valves, and piping is in need of rehabilitation. The Complex B sludge lines are clogged due to Struvite and need rehabilitation/replacement.

#### Scope of Work/Project Alternatives:

The scope of work will include study design and construction for the ferric chloride feed system at PS-1. Specifically it will include: a study to evaluate alternative locations for application of ferric chloride, a pilot study to test alternative application points, and inspection of the existing chemical feed systems, a study to provide recommendations for system modifications and improvements, design of recommended system improvements, and construction of chemical feed system improvements. Evaluation and recommended design and construction of the sludge lines in Complex B is also included in the scope.

#### Other Important Info:

\*Innovation note: Align sizing & design with U of M phosphorus & enhanced carbon capture studies, as well as improved mixing of the ferric with primary influent.

Challenges: Maintaining capacity of the existing feed system during construction will be a challenge. Also, determining the simplest system that will meet current and future phosphorous limits for both primary and secondary effluent will be a challenge.

Project History: There are phosphorous effluent permit limits for both primary effluent (during wet weather) and for secondary effluent. Effluent limits for phosphorous were lowered again in 2016 and now stand at 1.5 mg/l for primary effluent and 0.7 mg/l (October – March) and 0.6 mg/l (April – September) for secondary effluent. GLWA has historically been able to meet the phosphorous limits for both primary and secondary effluent by adding ferric chloride to the primary clarifier influent. The physical/chemical removal in the primary clarifiers lowered the phosphorous concentrations to meet the primary effluent limits. However, GLWA has begun to experience some difficulty with the settling of the secondary biomass in the final clarifiers. Preliminary investigations have

**Project Title:** WRRF Rehabilitation of Ferric Chloride Feed System in PS-1 and Complex B Sludge Lines

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indicated that this settling ability issue could be caused by low phosphorous concentrations in the secondary influent wastewater. This is because the biomass in the secondary system requires a certain ratio of carbon (CBOD), nitrogen, and phosphorous to reduce the pollutant concentrations and then settle in the final clarifiers. As such, in addition to rehabilitating the ferric chloride system at PS-1, there also needs to be a study and possibly pilot test conducted to review the best location for ferric chloride addition to the wastewater.

**Primary Driver:** 1 - Condition

**Driver Explanation:**

The current chemical feed systems at PS-1 has deteriorated to the point where this need to be rehabilitated.

**Project Title:** WRRF Rehabilitation of Ferric Chloride Feed System in PS-1 and Complex B Sludge Lines

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**Scoring****Project Manager Weighted Score:** 78.30

Criteria Name	Score	Comment
Condition	4	Scores carried over from previous year
Performance (Service Level/Reliability)	4	Scores carried over from previous year
Regulatory (Environmental/Legal)	4	Scores carried over from previous year
Operations and Maintenance	3	Scores carried over from previous year
Health and Safety	4	Scores carried over from previous year
Public Benefit	3	Scores carried over from previous year
Financial	3	Scores carried over from previous year
Efficiency and Innovation	4	Scores carried over from previous year

**Risk Committee Weighted Score:** 78.30

Criteria Name	Score	Comment
Condition	4	Scores carried over from previous year
Performance (Service Level/Reliability)	4	Scores carried over from previous year
Regulatory (Environmental/Legal)	4	Scores carried over from previous year
Operations and Maintenance	3	Scores carried over from previous year
Health and Safety	4	Scores carried over from previous year
Public Benefit	3	Scores carried over from previous year
Financial	3	Scores carried over from previous year
Efficiency and Innovation	4	Scores carried over from previous year

**Project Title:** WRRF Rehabilitation of Ferric Chloride Feed System in PS-1 and Complex B Sludge Lines

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

**Phase Budget:** Wastewater      **Start Date:** 7/1/2018  
**Phase Status:** Active      **End Date:** 4/28/2023  
**Cost Allocation:** CTA      **Fund:** N/A - Not Applicable  
**Funding Source:** Capital Funding Plan (CFP)      **Usefull Life > Yrs:** No  
**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:** Class 4      **Cost Est. Source:**  
**Cost Est. Date:** 10/1/2017      **Cost Est. Prepared By:** Ali Khraizat

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$410	\$290	\$290	\$65	\$54	\$0	\$0	\$0	\$0	\$54	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2018	4/28/2023
Capital Delivery Salary	7/1/2018	4/28/2023
Professional Services (CS-272 - 72021A.08 / 72007B.03)	7/1/2018	4/28/2023
Contractual Professional Services	7/1/2018	4/28/2023
Other Capital Improvement Costs	7/1/2018	4/28/2023
Capitalized Interest	7/1/2018	4/28/2023

**Project Title:** WRRF Rehabilitation of Ferric Chloride Feed System in PS-1 and Complex B Sludge Lines

**Phase:** Study & Design & Construction Assistance # 1 (CS-166, 1802543)

**Phase Title:** Rehabilitation of Ferric Chloride Feed Systems

<b>Phase Budget:</b> Wastewater	<b>Start Date:</b> 7/1/2018
<b>Phase Status:</b> Future Planned Start	<b>End Date:</b> 4/28/2023
<b>Cost Allocation:</b> CTA	<b>Fund:</b> N/A - Not Applicable
<b>Funding Source:</b> Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b> Yes
<b>Tot. Federal Loan Amount:</b> \$0.00	

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 4	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Study &amp; Design &amp; Construction Assistance # 1 (CS-166, 1802543)</b>	\$2,394	\$1,580	\$1,580	\$443	\$370	\$0	\$0	\$0	\$0	\$370	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (1802543)	7/1/2018	4/28/2023
Design/Engineering (CS-166)	7/1/2018	6/30/2020
Design/Engineering (MISC)	5/1/2020	1/31/2021



**Project Title:** WRRF Rehabilitation of Ferric Chloride Feed System in PS-1 and Complex B Sludge Lines

**Phase:** Construction (Build) # 1 (2002190)

**Phase Title:** Rehabilitation of Ferric Chloride Feed Systems

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	4/5/2021
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	4/5/2023
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 4	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	5 Year Total
<b>Construction (Build) # 1 (2002190)</b>	\$9,839	\$0	\$0	\$7,757	\$2,081	\$0	\$2,081

**Phase Dates**

Activity Name	Start Date	End Date
Construction (2002190)	4/5/2021	4/5/2023

**Project Title:** WRRF Rehabilitation of Ferric Chloride Feed System in PS-1 and Complex B Sludge Lines

**Phase:** Miscellaneous

**Phase Title:** Miscellaneous

**Phase Budget:** Wastewater

**Start Date:** 7/1/2020

**Phase Status:**

**End Date:** 6/30/2021

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** WRRF Rehabilitation of Ferric Chloride Feed System in PS-1 and Complex B Sludge Lines

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2018	\$9,633	\$400	\$1,400	\$5,200	\$2,000	\$633	\$0	\$0	\$0	\$0	\$0	\$9,633
2019	\$9,650	\$0	\$7	\$115	\$1,259	\$2,732	\$5,537	\$2,363	\$0	\$0	\$0	\$12,013
2020	\$9,533	\$12	\$1,021	\$2,950	\$4,983	\$1,600	\$0	\$0	\$0	\$0	\$0	\$10,566
2021	\$9,408	\$0	\$178	\$1,239	\$5,522	\$3,886	\$0	\$0	\$0	\$0	\$0	\$10,825
2022	\$6,329	\$0	\$165	\$1,464	\$3,429	\$5,358	\$972	\$0	\$0	\$0	\$0	\$11,388

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$12,643,903	\$1,870,766	\$8,266,867	\$2,506,271	\$0	\$0	\$0	\$0	\$2,506,271	\$0

**Description of CIP Changes:**

This project was moved forward due to SRF funding Source to begin in FY 2019.

**Project Title:** WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System

**Project Status:** Future Planned - Within 5 Year Plan

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** WRRF

**Class Lvl 3:** Primary Treatment

☐ **Project New to CIP**

- ☒ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



Primary Circular Scum House, Inside

**Project Engineer/Manager:** Chris Wilson

**Director:** Dan Alford

**Managing Dept.:** WW Design Eng

**Date Original Business Case Prepared:** 7/27/2016

**Year Project Added to CIP:** 2017

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** WRRF

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

The circular clarifiers scum removal system is over 10 years old and need to be rehabilitated. They will help protect the secondary treatment process by preventing scum from entering the aeration tanks.

**Scope of Work/Project Alternatives:**

This project will provide for the study, design, and construction of new scum equipment in the Scum Buildings for the circular clarifiers. The study will consist of an evaluation of the existing process and simplified alternative systems for scum removal including the scum removal from the buildings. Future alternatives for scum disposal, such as addition to an anaerobic digestion process, will be considered. All alternatives will be evaluated for energy efficiency (reduction of electrical usage). The scum removal system at the rectangular PCs will also be evaluated to determine which aspects can be applied to the circular SBs. Design and construction services will be included for the selected scum removal system.

**Other Important Info:**

\*Innovation note: See project write-up -- evaluate alternatives for energy efficiency.

Project History: There are 12 rectangular PCs (1-12) and 6 circular PCs (13-18) clarifiers at the WRRF. PCs remove TSS, BOD, and phosphorous through a chemically enhanced settling process. The clarifiers also remove fats, oils, and grease (FOG or scum) by skimming the surface of the clarifiers and transporting the scum to a SB where it can be concentrated and pumped again to be hauled off site. The SBs for the rectangular clarifiers were recently rehabilitated. They have a fairly simple system and appear to be operating well. The SBs for the circular clarifiers utilize a somewhat complex transport and concentration system. New SBs were installed for PCs 17 and 18 when they were constructed. Since their installation, the equipment in the circular clarifier SBs has been complicated to operate and difficult to maintain. Much of the equipment is out of service for extended periods of time.

Challenges: Each of the scum removal facility serves two circular clarifiers, so two circular clarifiers at a given time needs to be out of services during rehabilitation, this will

**Project Title:** WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System

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limit the primary capacity to minimum to meet NPDES permit requirements.

**Primary Driver:** 1 - Condition

**Driver Explanation:**

The condition of the existing equipment is old and complicated, this results in significant down time and maintenance challenges.

**Project Title:** WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System

### Scoring

**Project Manager Weighted Score:** 76.60

Criteria Name	Score	Comment
Condition	4	Asset equipment remain the same, Condition remains the same
Performance (Service Level/Reliability)	5	Asset equipment remain the same, Performance remains the same
Regulatory (Environmental/Legal)	3	Asset equipment remain the same, Regulatory issues remain the same
Operations and Maintenance	2	Asset equipment remain the same, O&M risks remain the same
Health and Safety	2	Asset equipment remain the same, Public Health risks remain the same
Public Benefit	2	Asset equipment remain the same, Public Benefit risks remain the same
Financial	3	Asset equipment remain the same, Financial risks remain the same
Efficiency and Innovation	3	Asset equipment remain the same, Efficiency and Innovation remain the same

**Risk Committee Weighted Score:** 76.60

Criteria Name	Score	Comment
Condition	4	Scores carried over from previous year
Performance (Service Level/Reliability)	5	Scores carried over from previous year
Regulatory (Environmental/Legal)	3	Scores carried over from previous year
Operations and Maintenance	2	Scores carried over from previous year
Health and Safety	2	Scores carried over from previous year
Public Benefit	2	Scores carried over from previous year
Financial	3	Scores carried over from previous year
Efficiency and Innovation	3	Scores carried over from previous year

**Project Title:** WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	5/7/2020
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	2/2/2027
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	No
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 4	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b> 10/1/2017	<b>Cost Est. Prepared By:</b> Ali Khraizat

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$328	\$39	\$39	\$41	\$41	\$41	\$41	\$41	\$41	\$206	\$41

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	3/25/2022	2/2/2027
Capital Delivery Salary	3/25/2022	2/2/2027
Professional Services (CS-272 - 72014A.02 / 72021A.03)	5/7/2020	5/6/2022

**Project Title:** WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System

**Phase:** Study & Design & Construction Assistance # 1

**Phase Title:** Rehabilitation of the Circular Primary Clarifier Scum Removal System

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	3/25/2022
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	1/1/2027
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 4	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b> 10/2/2017	<b>Cost Est. Prepared By:</b> Ali Khraizat

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Study &amp; Design &amp; Construction Assistance # 1</b>	\$3,093	\$0	\$0	\$208	\$958	\$458	\$366	\$366	\$366	\$2,516	\$368

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	3/25/2022	1/1/2027



**Project Title:** WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System

**Phase:** Construction (Build) # 1

**Phase Title:** Rehabilitation of the Circular Primary Clarifier Scum Removal System

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	2/2/2024
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	2/2/2027
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 3	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b> Engineer

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Construction (Build) # 1</b>	\$18,367	\$0	\$0	\$0	\$0	\$4,592	\$4,592	\$4,592	\$13,777	\$4,590

**Phase Dates**

Activity Name	Start Date	End Date
Construction	2/2/2024	2/2/2027

**Project Title:** WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System

**Phase:** Miscellaneous

**Phase Title:** Miscellaneous

**Phase Budget:** Wastewater

**Start Date:** 7/1/2020

**Phase Status:**

**End Date:** 6/30/2021

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	Total
2018	\$7,801	\$266	\$324	\$1,870	\$2,671	\$2,670	\$2,679	\$0	\$0	\$10,480
2019	\$7,234	\$0	\$0	\$7	\$859	\$572	\$5,796	\$5,005	\$0	\$12,239
2020	\$11,359	\$0	\$0	\$0	\$778	\$619	\$5,237	\$4,725	\$35	\$11,394
2021	\$13,228	\$0	\$0	\$21	\$313	\$1,254	\$802	\$8,715	\$2,144	\$13,249
2022	\$12,762	\$0	\$0	\$3	\$243	\$476	\$2,740	\$5,619	\$3,927	\$13,008

**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$21,789,674	\$39,674	\$250,000	\$1,000,000	\$500,000	\$5,000,000	\$5,000,000	\$5,000,000	\$16,500,001	\$5,000,000

**Description of CIP Changes:**

Minor changes to the timing of projected expenses. Updated cost to reflect changes in Scum Concentrator Building

**Project Title:** Rehabilitation of Sludge Processing Complexes A and B

**Project Status:** Future Planned - Within 5 Year Plan

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** WRRF

**Class Lvl 3:** Primary Treatment

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



Complex B, Basement

**Project Engineer/Manager:** Chris Wilson

**Director:** Dan Alford

**Managing Dept.:** WW Design Eng

**Date Original Business Case Prepared:**  
 8/21/2019

**Year Project Added to CIP:** 2019

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** WRRF

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

Both Complex A and Complex B have reached the end of their design life. The majority of the equipment for the two processes are located below grade in areas prone to flooding. Tanks are located above grade and have little to no access around the perimeter, this limits and reduces cleaning effectiveness. Both the valves and the pumps used to transfer sludge to the BDF are past their design life. Equipment breakage affects the plant ability to process sludge.

**Scope of Work/Project Alternatives:**

The work consists of evaluation, design and rehabilitation of both Complex A and Complex B. Scope to include tank repair to improving tank access and increase life, building and process repair to including structural, mechanical, process, electrical, and instrumentation replacement. Scope should be focused on relocating the sludge pumps from below grade to above grade which could include new above grade structures and cross connecting pumps to allow for additional flexibility in feeding the BDF process.

**Other Important Info:**

Maintaining the MDEQ-NPDES required capacity during the construction phase of the project.

**Primary Driver:** 8 - Efficiency

**Driver Explanation:**

Equipment has exceeded its design life.

**Project Title:** Rehabilitation of Sludge Processing Complexes A and B

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### Scoring

**Project Manager Weighted Score:** 89.70

Criteria Name	Score	Comment
Condition	2	Asset equipment remain the same, Condition remains the same
Performance (Service Level/Reliability)	2	Asset equipment remain the same, Performance remains the same
Regulatory (Environmental/Legal)	4	Asset equipment remain the same, Regulatory issues remain the same
Operations and Maintenance	4	Asset equipment remain the same, O&M risks remain the same
Health and Safety	5	Asset equipment remain the same, Public Health risks remain the same
Public Benefit	4	Asset equipment remain the same, Public Benefit risks remain the same
Financial	2	Asset equipment remain the same, Financial risks remain the same
Efficiency and Innovation	2	Asset equipment remain the same, Efficiency and Innovation remain the same

**Risk Committee Weighted Score:** 89.70

Criteria Name	Score	Comment
Condition	2	Scores carried over from previous year
Performance (Service Level/Reliability)	2	Scores carried over from previous year
Regulatory (Environmental/Legal)	4	Scores carried over from previous year
Operations and Maintenance	4	Scores carried over from previous year
Health and Safety	5	Scores carried over from previous year
Public Benefit	4	Scores carried over from previous year
Financial	2	Scores carried over from previous year
Efficiency and Innovation	2	Scores carried over from previous year

**Project Title:** Rehabilitation of Sludge Processing Complexes A and B

**Phase:** GLWA Salaries

**Phase Title:** Project Mgt

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	5/7/2020
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	6/28/2030
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b>	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$498	\$94	\$94	\$0	\$0	\$0	\$0	\$67	\$67	\$134	\$269

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	10/1/2025	6/28/2030
Capital Delivery Salary	10/1/2025	6/28/2030
Professional Services (CS-272 - 72014A.03 / 72007B.04)	5/7/2020	5/6/2022
Contractual Professional Services	10/1/2025	6/28/2030
Other Capital Improvement Costs	10/1/2025	6/28/2030
Capitalized Interest	10/1/2025	6/28/2030

**Project Title:** Rehabilitation of Sludge Processing Complexes A and B

**Phase:** Study # 1

**Phase Title:** TBD

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	10/1/2025
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	6/28/2030
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 5	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Study # 1</b>	\$3,316	\$0	\$0	\$0	\$0	\$0	\$0	\$852	\$852	\$1,705	\$1,610

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	10/1/2025	6/28/2030

**Project Title:** Rehabilitation of Sludge Processing Complexes A and B

**Phase:** Construction (Build) # 1

**Phase Title:** Construction

**Phase Budget:** Wastewater

**Start Date:** 1/1/2028

**Phase Status:** Future Planned Start

**End Date:** 6/28/2030

**Cost Allocation:** CTA

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY26	FY27	5 Year Total	FY28+
<b>Construction (Build) # 1</b>	\$16,079	\$0	\$0	\$0	\$0	\$0	\$16,079

**Phase Dates**

Activity Name	Start Date	End Date
Construction	1/1/2028	6/28/2030



**Project Title:** Rehabilitation of Sludge Processing Complexes A and B

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>5 Year Total</b>	<b>FY21</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>Total</b>
2021	\$926	\$0	\$0	\$178	\$748	\$13,113	\$0	\$14,039
2022	\$2,436	\$64	\$42	\$112	\$287	\$1,996	\$4,712	\$13,934

**Reporting Period 33: Ending FY21 M12 Jun**

<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>5 Year Total</b>	<b>FY28+</b>
\$19,894,269	\$94,270	\$0	\$0	\$0	\$0	\$920,000	\$920,000	\$1,840,000	\$17,959,999

**Description of CIP Changes:**

Updated timeline

**Project Title:** WRRF PS1 Screening and Grit Improvements

**Project Status:** Future Planned - Within 5 Year Plan

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** WRRF

**Class Lvl 3:** Primary Treatment

☐ **Project New to CIP**

- ☒ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



**Project Engineer/Manager:** Chris Wilson

**Director:** Dan Alford

**Managing Dept.:** WW Design Eng

**Date Original Business Case Prepared:** 8/7/2019

**Year Project Added to CIP:** 2019

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** WRRF

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

Addition of fine screens (1/4 inch) for more reliable and efficient screenings removal. Addition of screenings washing and compaction to reduce truck traffic and cost of disposal. Improvement of grit collection system with more efficient, state-of-the-art, grit collection and pumping system, and grit washing and classification to reduce truck traffic and cost of disposal. Improvements to the grit screenings and grit removal and handling systems will improve the performance of all downstream processes, reduce maintenance costs and increase life of downstream equipment.

**Scope of Work/Project Alternatives:**

The work consists of evaluation, design and construction of the addition of new fine screens (1/4 inch) downstream of the bar racks, addition of screenings washing and compaction, inclusion of stacked tray grit removal within the aerated grit tank and grit washing and/or classification. Work also includes the upgrade and expansion as necessary of the existing building that houses the screens and the screenings and grit handling and load out, including all lighting, HVAC, plumbing, electrical, and architectural work. New instrumentation and controls for operations and monitoring will also be provided. System shall be designed to meet long-term wet weather capacity requirements at PS1.

**Other Important Info:**

Maintaining the MDEQ-NPDES required capacity during the construction phase of the project. Coordination with the CIP Number 211006

**Primary Driver:** 2 - Performance

**Driver Explanation:**

Grit and screen system is not capturing enough material and its being found in downstream processes.

**Project Title:** WRRF PS1 Screening and Grit Improvements

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**Scoring****Project Manager Weighted Score:** 77.50

Criteria Name	Score	Comment
Condition	4	Asset equipment remain the same, Condition remains the same
Performance (Service Level/Reliability)	5	Asset equipment remain the same, Performance remains the same
Regulatory (Environmental/Legal)	2	Asset equipment remain the same, Regulatory issues remain the same
Operations and Maintenance	4	Asset equipment remain the same, O&M risks remain the same
Health and Safety	2	Asset equipment remain the same, Public Health risks remain the same
Public Benefit	2	Asset equipment remain the same, Public Benefit risks remain the same
Financial	4	Asset equipment remain the same, Financial risks remain the same
Efficiency and Innovation	3	Asset equipment remain the same, Efficiency and Innovation remain the same

**Risk Committee Weighted Score:** 77.50

Criteria Name	Score	Comment
Condition	4	Scores carried over from previous year
Performance (Service Level/Reliability)	5	Scores carried over from previous year
Regulatory (Environmental/Legal)	2	Scores carried over from previous year
Operations and Maintenance	4	Scores carried over from previous year
Health and Safety	2	Scores carried over from previous year
Public Benefit	2	Scores carried over from previous year
Financial	4	Scores carried over from previous year
Efficiency and Innovation	3	Scores carried over from previous year

**Project Title:** WRRF PS1 Screening and Grit Improvements

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	10/1/2027
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	1/1/2035
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	No
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b>	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$303	\$0	\$0	\$0	\$0	\$0	\$0	\$168

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	10/1/2027	1/1/2035
Capital Delivery Salary	10/1/2027	1/1/2035
Contractual Professional Services	10/1/2027	1/1/2035
Other Capital Improvement Costs	10/1/2027	1/1/2035
Capitalized Interest	10/1/2027	1/1/2035

**Project Title:** WRRF PS1 Screening and Grit Improvements

**Phase:** Design & Construction Assistance # 1

**Phase Title:** Addition of Fine Screens, New Grit Collection System

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	10/1/2027
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	2/28/2034
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b>	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY26	FY27	5 Year Total	FY28+
<b>Design &amp; Construction Assistance # 1</b>	\$23,238	\$0	\$0	\$0	\$0	\$0	\$16,568

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	10/1/2027	2/28/2034

**Project Title:** WRRF PS1 Screening and Grit Improvements

**Phase:** Construction (Build) # 1

**Phase Title:** Addition of Fine Screens, New Grit Collection System

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	10/1/2030
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	1/1/2035
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b>	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY28+
<b>Construction (Build) # 1</b>	\$69,458	\$0	\$0	\$24,251

**Phase Dates**

Activity Name	Start Date	End Date
Construction	10/1/2030	1/1/2035

**Project Title:** WRRF PS1 Screening and Grit Improvements

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>5 Year Total</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>Total</b>
2021	\$14	\$14	\$100,733	\$0	\$100,747
2022	\$175	\$42	\$132	\$3,639	\$93,303

**Reporting Period 33: Ending FY21 M12 Jun**

<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>5 Year Total</b>	<b>FY28+</b>
\$93,000,001	\$0	\$0	\$0	\$0	\$0	\$40,988,134

**Description of CIP Changes:**

Updated Scoring

**Project Title:** WRRF Chlorination and Dechlorination Process Equipment Improvements

**Project Status:** Pending Closeout

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** WRRF

**Class Lvl 3:** Secondary Treatment and Disinfection

☐ **Project New to CIP**

- ☒ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



**Project Engineer/Manager:** Chris Breinling

**Director:** Philip Kora

**Managing Dept.:** WW Construction Eng

**Date Original Business Case Prepared:**  
8/8/2016

**Year Project Added to CIP:** 2010

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** WRRF

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

The disinfection complex equipment condition has deteriorated because of the corrosive characteristics of the chemicals utilized in the operations of the area. This project is needed to restore equipment performance to OEM levels.

**Scope of Work/Project Alternatives:**

Scope of Work is to refurbish evaporators, chlorinators/sulfonators, replace regulating check valves, ejectors, process water valves, gas safety panels, compressors, gas flow meters, and all accessories and appurtenances. This proposed CIP budget is for construction only. The design and construction assistance services are budgeted through "As Needed Engineering Services Contract CS-1481, Task #23".

**Other Important Info:**

\*Innovation note: Align with considerations of alternative disinfection.  
The maintenance of the equipment hasn't been performed at the recommended intervals. Rebuilding the equipment and maintaining them according to OEM specifications would provide reliable performance.

Challenges: Chlorine and sulfur dioxide are both extremely hazardous toxic chemicals that can impact staff and the public if an uncontrolled gas release occurs. Maintaining staff safety, regulatory compliance, and meeting production requirements is a challenge.

Project History: The DMT Disinfection Complex was commissioned in 2003 and was expected to operate until 2023 without any major projects. However budget and staffing reductions caused the scheduled maintenance to be reduced so the equipment condition has deteriorated.

**Primary Driver:** 1 - Condition

**Driver Explanation:**

Non-compliance with the manufacturers recommended maintenance schedule has caused the disinfection



**Project Title:** WRRF Chlorination and Dechlorination Process Equipment Improvements

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equipment condition to deteriorate.

**Project Title:** WRRF Chlorination and Dechlorination Process Equipment Improvements

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**Scoring****Project Manager Weighted Score:** 95.30

Criteria Name	Score	Comment
Condition	5	Scores carried over from 2021-2025 CIP
Performance (Service Level/Reliability)	4	Scores carried over from 2021-2025 CIP
Regulatory (Environmental/Legal)	5	Scores carried over from 2021-2025 CIP
Operations and Maintenance	4	Scores carried over from 2021-2025 CIP
Health and Safety	5	Scores carried over from 2021-2025 CIP
Public Benefit	4	Scores carried over from 2021-2025 CIP
Financial	3	Scores carried over from 2021-2025 CIP
Efficiency and Innovation	2	Scores carried over from 2021-2025 CIP

**Risk Committee Weighted Score:** 94.50

Criteria Name	Score	Comment
Condition	5	Scores carried over from 2021-2025 CIP
Performance (Service Level/Reliability)	4	Scores carried over from 2021-2025 CIP
Regulatory (Environmental/Legal)	4	Scores carried over from 2021-2025 CIP
Operations and Maintenance	3	Scores carried over from 2021-2025 CIP
Health and Safety	5	Scores carried over from 2021-2025 CIP
Public Benefit	4	Scores carried over from 2021-2025 CIP
Financial	3	Scores carried over from 2021-2025 CIP
Efficiency and Innovation	4	Scores carried over from 2021-2025 CIP

**Project Title:** WRRF Chlorination and Dechlorination Process Equipment Improvements

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

**Phase Budget:** Wastewater

**Start Date:** 6/27/2017

**Phase Status:** Active

**End Date:** 12/31/2021

**Cost Allocation:** CTA

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:** Class 5

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$148	\$148	\$148	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	6/27/2017	12/31/2021
Capital Delivery Salary	6/27/2017	12/31/2021
Contractual Professional Services	6/27/2017	12/31/2021
Other Capital Improvement Costs	6/27/2017	12/31/2021
Capitalized Interest	6/27/2017	12/31/2021

**Project Title:** WRRF Chlorination and Dechlorination Process Equipment Improvements

**Phase:** Construction Assistance # 1 (CS-1481, CS-301)

**Phase Title:** CS-301 Task 23 - General Eng Serves (Sigma)

<b>Phase Budget:</b> Wastewater	<b>Start Date:</b> 7/1/2016
<b>Phase Status:</b> Active	<b>End Date:</b> 12/31/2021
<b>Cost Allocation:</b> CTA	<b>Fund:</b> N/A - Not Applicable
<b>Funding Source:</b> Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b> Yes
<b>Tot. Federal Loan Amount:</b> \$0.00	

**Phase Comments/Description:**

Existing DWSD contract coverted over to new GLWA contract.

<b>Cost Est. Class:</b> Class 5	<b>Cost Est. Source:</b> Contract
<b>Cost Est. Date:</b> 9/12/2018	<b>Cost Est. Prepared By:</b> WRRF Eng Design

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Construction Assistance # 1 (CS-1481, CS-301)</b>	\$331	\$331	\$331	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (CS-301)	6/27/2017	12/31/2021
Design/Engineering (CS-1481)	7/1/2016	6/29/2018
Design/Engineering (MISC)	7/1/2017	6/30/2018

**Project Title:** WRRF Chlorination and Dechlorination Process Equipment Improvements

**Phase:** Construction (Build) # 1 (CON-238)

**Phase Title:** Chlorination and Dechlorination Process Equipment Improvements

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	9/30/2019
<b>Phase Status:</b>	Under Procurement	<b>End Date:</b>	6/21/2021
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 4	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b> 10/2/2017	<b>Cost Est. Prepared By:</b> Ali Khraizat

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22
<b>Construction (Build) # 1 (CON-238)</b>	\$5,163	\$5,163	\$5,163	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Construction (CON-238)	9/30/2019	6/21/2021

**Project Title:** WRRF Chlorination and Dechlorination Process Equipment Improvements

**Phase:** Miscellaneous

**Phase Title:** Miscellaneous

**Phase Budget:** Wastewater

**Start Date:** 7/1/2020

**Phase Status:**

**End Date:** 6/30/2021

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** WRRF Chlorination and Dechlorination Process Equipment Improvements

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2018	\$5,000	\$400	\$2,800	\$1,800	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,000
2019	\$5,184	\$0	\$2,101	\$2,422	\$661	\$0	\$0	\$0	\$0	\$0	\$0	\$5,270
2020	\$4,015	\$117	\$913	\$2,345	\$1,670	\$0	\$0	\$0	\$0	\$0	\$0	\$5,045
2021	\$1,850	\$0	\$190	\$3,726	\$1,850	\$0	\$0	\$0	\$0	\$0	\$0	\$5,766
2022	\$0	\$31	\$73	\$3,700	\$1,940	\$0	\$0	\$0	\$0	\$0	\$0	\$5,742

**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$5,642,328	\$5,642,328	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Description of CIP Changes:**

This project is in active construction phase and is progressing ahead of schedule

**Project Title:** WRRF Rouge River Outfall (RRO) Disinfection (Alternative)

**Project Status:** Closed

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** WRRF

**Class Lvl 3:** Secondary Treatment and Disinfection

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**


**Project Engineer/Manager:** Phillip Kora

**Director:** Philip Kora

**Managing Dept.:** WW Construction Eng

**Date Original Business Case Prepared:**  
 2/11/2015

**Year Project Added to CIP:** 2014

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** Rouge River Outfall

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

Provide project oversight and design build services for alternative disinfection services to meet NPDES Permit requirements at existing Rouge River Outfall

**Scope of Work/Project Alternatives:**

The consultant shall provide comprehensive professional services for project oversight and Owner's representation for the PC-797 RRO Disinfection Progressive Design-Build Contract. The scope of work consists of completing basis of design, design and construction services to develop and implement a solution that will result in 100% disinfection of wet weather flow discharged from WRRF to Detroit River outfall and Rouge River Outfall in order to meet NPDES Permit requirements.

**Other Important Info:**

Challenges: N/A - Under Procurement.

**Project History:** The DR0-2 Outfall was originally designed in 1998 under CS-1150, and construction began in 1999 under PC-709. Some surface construction work and substantial underground work were performed, including construction of the entrance shaft, two access shafts, six diffuser riser shafts in the Detroit River, and about half of the length of the tunnel. On April 23, 2003, uncontrollable high rates of ground water mixed with Hydrogen Sulfide (H<sub>2</sub>S) inflow flooded the tunnel, and it has remained so since that time.

After the tunnel flooded, GLWA (then DWSD) terminated the PC-709 contract and looked for other alternative to complete the work. After further study of the tunnel construction a different alternative was considered and thus, scope for the Modified Detroit River Outfall No. 2 (MOD DR0-2) under CS-1448 design was established. This contract called for a design to construct a new rock tunnel at a higher elevation with Slurry Shield Tunnel Boring Machine (TBM). The design of the MOD DR0-2 was completed on December 2007 and the construction of the DR0-2 project under PC-771 was started on November 2008. Due to economic hardship during the



**Project Title:** WRRF Rouge River Outfall (RRO) Disinfection (Alternative)

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fiscal year 2008/2009, DWSD requested MDEQ to terminate this contract. After further discussion an agreement reached with GLWA (then DWSD) and MDEQ to allow termination of this Contract and look for feasible and cost effective solutions to meet the wet-weather discharge to Rouge River Outfall. Therefore, on April 2009, GLWA (then DWSD) terminated the PC-771, MOD DR0-2 Contract.

The Rouge River Outfall No. 2 (RR0-2) proposal was first developed in 2009. The RR0-2 was to be a ground level conduit extending approximately 2,500 feet to the intersection of the Rouge River and the Rouge Shipping canal. The RR0-2 conduit was to be used during the wet-weather events and primary effluent to the river shall be disinfected by mixing of Chlorine and De-chlorination. The Basis of Design (BOD) for the RR0-2 project was issued on November 6, 2009. GLWA (then DWSD) performed a RR0-2 Segment- 1 contract to do the ancillary work such as modification of gates, stop logs and chlorine tank shut off valves at WRRF.

In 2012/2013 the WRRF commissioned a study of the feasibility of alternative disinfection methods for meeting the requirements of the Rouge River Disinfection. The results of this study and a subsequent hydraulic study came to the conclusion that the existing conduits to the Rouge River had sufficient contact time to properly disinfect and dechlorinate the secondary effluent from the WRRF. If a method could be designed to shunt secondary flows to the Rouge

River during wet weather and send primary effluent through the longer DRO, then a substantial savings would result from a new design approach. This approach was further explored and discussed with the MDEQ. The result is a NPDES permit modification allowing for the construction of the proposed Rouge River Outfall Disinfection project, keeping the April 2019 project completion date that had been in the NPDES permit.

**Primary Driver:** N/A - Under Procurement

**Driver Explanation:**

N/A - Under Procurement

**Project Title:** WRRF Rouge River Outfall (RRO) Disinfection (Alternative)**Scoring****Project Manager Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Risk Committee Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Project Title:** WRRF Rouge River Outfall (RRO) Disinfection (Alternative)

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

**Phase Budget:** Wastewater

**Start Date:** 2/19/2016

**Phase Status:**

**End Date:** 6/30/2020

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$597	\$597	\$597	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	2/19/2016	6/30/2020
Capital Delivery Salary	2/19/2016	6/30/2020
Contractual Professional Services	2/19/2016	6/30/2020
Other Capital Improvement Costs	2/19/2016	6/30/2020
Capitalized Interest	2/19/2016	6/30/2020

**Project Title:** WRRF Rouge River Outfall (RRO) Disinfection (Alternative)

**Phase:** Construction (Build) # 1 (PC-797)

**Phase Title:** Construction (Build) # 1 (PC-797)

**Phase Budget:** Wastewater

**Start Date:** 7/1/2017

**Phase Status:**

**End Date:** 6/30/2020

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Construction (Build) # 1 (PC-797)</b>	\$40,698	\$40,698	\$40,698	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Construction (PC-797)	7/1/2017	6/30/2020

**Project Title:** WRRF Rouge River Outfall (RRO) Disinfection (Alternative)

**Phase:** Construction Management # 1 (CS-1781, CS-1728)

**Phase Title:** Construction Management # 1 (CS-1781, CS-1728)

**Phase Budget:** Wastewater

**Start Date:** 7/1/2015

**Phase Status:**

**End Date:** 6/30/2020

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Construction Management # 1 (CS-1781, CS-1728)</b>	\$2,493	\$2,493	\$2,493	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Construction Management (RPR) Services (CS-1781)	2/19/2016	6/30/2020
Design/Engineering (CS-1728)	7/1/2015	6/30/2016

**Project Title:** WRRF Rouge River Outfall (RRO) Disinfection (Alternative)

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2018	\$40,340	\$6,530	\$15,800	\$15,520	\$9,020	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$47,599
2019	\$19,974	\$6,873	\$20,619	\$15,817	\$4,157	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$47,466
2020	\$4,583	\$0	\$26,441	\$17,009	\$4,583	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$48,033
2021	\$0	\$0	\$0	\$41,692	\$2,748	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$44,440
2022	\$0	\$0	\$19,568	\$15,251	\$8,970	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$43,789

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$43,788,731	\$43,788,731	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Description of CIP Changes:**

This project is complete and waiting for the close out documentation to release the retention.

**Project Title:** WRRF Rehabilitation of the Secondary Clarifiers

**Project Status:** Future Planned - Within 5 Year Plan

**CIP Type:** Program

**Class Lvl 1:** Wastewater

**Class Lvl 2:** WRRF

**Class Lvl 3:** Secondary Treatment and Disinfection

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



Secondary Clarifier

**Project Engineer/Manager:** Chris Wilson

**Director:** Dan Alford

**Managing Dept.:** WW Design Eng

**Date Original Business Case Prepared:** 7/27/2016

**Year Project Added to CIP:** 2017

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** WRRF

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

The secondary clarifiers need to be inspected and rehabilitated for certain components such as the rake arms.

**Scope of Work/Project Alternatives:**

This project will provide for inspection, study, design, and construction for refurbishing the secondary clarifiers. A key component will be the inspection of the concrete and the rake arms. Once the condition of these components is determined, alternatives will be evaluated, and the selected alternative will be designed and constructed. The scope will also include evaluating and designing isolation gates for the individual clarifiers. The B Houses have energy intensive HVAC units. These will be evaluated for potential payback with alternative, energy efficient units.

**Other Important Info:**

**Challenges:** This will be a long-term project because only one or two clarifiers can be taken out of service at a time. Also, there may be different levels of rehabilitation for each clarifier depending upon the results of the inspection.

**Project History:** There are 25 secondary clarifiers at the GLWA WRRF. They have been rehabilitated in the past for other components such as RAS pumps, troughs and weirs, and center drives. It is time to refurbish some of the other key components.

**Primary Driver:** 1 - Condition

**Driver Explanation:**

Some of the key components are approaching the end of their useful life.

**Project Title:** WRRF Rehabilitation of the Secondary Clarifiers

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**Scoring****Project Manager Weighted Score:** 72.00

Criteria Name	Score	Comment
Condition	4	Asset equipment remain the same, Condition remains the same
Performance (Service Level/Reliability)	3	Asset equipment remain the same, Performance remains the same
Regulatory (Environmental/Legal)	4	Asset equipment remain the same, Regulatory issues remain the same
Operations and Maintenance	3	Asset equipment remain the same, O&M risks remain the same
Health and Safety	1	Asset equipment remain the same, Public Health risks remain the same
Public Benefit	4	Asset equipment remain the same, Public Benefit risks remain the same
Financial	1	Asset equipment remain the same, Financial risks remain the same
Efficiency and Innovation	1	Asset equipment remain the same, Efficiency and Innovation remain the same

**Risk Committee Weighted Score:** 72.00

Criteria Name	Score	Comment
Condition	4	Scores carried over from previous year
Performance (Service Level/Reliability)	3	Scores carried over from previous year
Regulatory (Environmental/Legal)	4	Scores carried over from previous year
Operations and Maintenance	3	Scores carried over from previous year
Health and Safety	1	Scores carried over from previous year
Public Benefit	4	Scores carried over from previous year
Financial	1	Scores carried over from previous year
Efficiency and Innovation	1	Scores carried over from previous year



**Project Title:** WRRF Rehabilitation of the Secondary Clarifiers

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	5/7/2020
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	1/1/2051
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	No
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 4	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b> 10/1/2017	<b>Cost Est. Prepared By:</b> Ali Khraizat

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$398	\$2	\$2	\$0	\$0	\$14	\$14	\$14	\$14	\$58	\$73

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	1/1/2023	1/1/2051
Capital Delivery Salary	1/1/2023	1/1/2051
Professional Services (CS-272 - 72014A.04 / 72007B.05)	5/7/2020	5/6/2022
Contractual Professional Services	1/1/2023	1/1/2051
Other Capital Improvement Costs	1/1/2023	1/1/2051
Capitalized Interest	1/1/2023	1/1/2051

**Project Title:** WRRF Rehabilitation of the Secondary Clarifiers

**Phase:** Study & Design & Construction Assistance # 1

**Phase Title:** Rehabilitation of the Secondary Clarifiers

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	1/1/2023
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	1/1/2030
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 4	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b> 10/2/2017	<b>Cost Est. Prepared By:</b> Ali Khraizat

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Study &amp; Design &amp; Construction Assistance # 1</b>	\$3,668	\$0	\$0	\$0	\$0	\$774	\$774	\$380	\$72	\$2,002	\$362

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	1/1/2023	1/1/2030

**Project Title:** WRRF Rehabilitation of the Secondary Clarifiers

**Phase:** Construction (Build) # 1

**Phase Title:** Rehabilitation of the Secondary Clarifiers

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	7/1/2026
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	1/1/2051
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

**Cost Est. Class:** Class 3

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:** Engineer

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY25	FY26	FY27	5 Year Total	FY28+
<b>Construction (Build) # 1</b>	\$46,792	\$0	\$0	\$0	\$0	\$1,969	\$1,969	\$9,845

**Phase Dates**

Activity Name	Start Date	End Date
Construction	7/1/2026	1/1/2051

**Project Title:** WRRF Rehabilitation of the Secondary Clarifiers

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2018	\$20,500	\$301	\$3,576	\$5,543	\$5,540	\$5,540	\$10,499	\$0	\$0	\$0	\$0	\$30,999
2019	\$15,129	\$0	\$0	\$859	\$1,374	\$3,680	\$9,216	\$19,676	\$0	\$0	\$0	\$34,805
2020	\$1,004	\$0	\$0	\$0	\$0	\$0	\$71	\$933	\$29,114	\$0	\$0	\$30,118
2021	\$1,853	\$0	\$0	\$0	\$0	\$15	\$427	\$879	\$532	\$28,288	\$0	\$30,141
2022	\$3,929	\$0	\$0	\$0	\$0	\$10	\$124	\$240	\$240	\$3,316	\$4,033	\$49,871

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$50,859,432	\$2,247	\$0	\$0	\$789,600	\$789,600	\$394,800	\$2,056,155	\$4,030,155	\$10,280,774

**Description of CIP Changes:**

Project was moved to a Program

**Project Title:** WRRF Aeration Improvements 1 and 2

**Project Status:** Project Execution - Design

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** WRRF

**Class Lvl 3:** Secondary Treatment and Disinfection

☐ **Project New to CIP**

- ☒ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



Aeration Basin 1 and ILP's 1 and 2

**Project Engineer/Manager:** Chris Wilson

**Director:** Dan Alford

**Managing Dept.:** WW Design Eng

**Date Original Business Case Prepared:** 9/14/2017

**Year Project Added to CIP:** 2017

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** WRRF

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

The ILPs convey primary effluent to the secondary bioreactors (aeration decks). These pumps have reached their useful life and are in need of replacement. The pump selection is integrally connected to improvements in the aeration decks related to the conversion to biological phosphorus removal, implementation of step feed and overall improved hydraulic control in the aeration decks and flow control through the secondary system. Implementation of biological phosphorus removal will reduce oxygen and chemical use resulting in a more sustainable treatment system, and implementation of step feed will improve high flow management through the secondary system increasing the volume of flow that can be treated through the secondary system thus minimizing the volume of flow discharged without secondary system. Hydraulic improvements ease operations and minimize the operator attention on the numerous surface aerators.

**Scope of Work/Project Alternatives:**

The work consists of evaluation, design and construction of the replacement of ILPs 1 & 2, conversion of aeration decks 1 & 2 to incorporate biological phosphorus removal, including replacement of mixers in Bays 1, 2 and 3, relocation of the oxygen feed, and a new purge blower. Incorporation of step feed includes modification of the influent conditions to allow primary effluent to be directed to Bay 1, as well as two other locations down the length of the tank. Weir length will be increased to reduce the variation in the hydraulic grade line across the tank to maintain adequate submergence of mixer/aerators and reduce the frequency of mixer/aerators tripping out on surge. Replacement of Mixer/aerators in Decks 4 through 10 will be evaluated and could be included as an add-alternate to the contract.

**Other Important Info:**

Opportunity for a common header system to allow for any ILP to supply any bioreactor. If feasible provide ILPs that can meet the regulatory and dry weather needs without the need for speed control.

Challenges: Maintaining the required wet weather secondary capacity of 930 MGD while operating efficiently during dry weather flows.

Project History: ILP Station No. 1 houses ILP Nos. 1 and 2. The pumps are vertical turbine type each with a maximum capacity of 365 MGD and a motor size of 2,500 hp. The pumps are equipped with variable frequency drives (VFDs) to vary the pump speed. ILP Nos. 1 and 2 can feed Aeration Deck Nos. 1 and 2.

ILP Station No. 2 houses ILP Nos. 3, 4, and 7. The pumps are vertical turbine pumps with a maximum rated design capacity of 350 MGD each and a motor size of 2,500 hp. The pumps are also equipped with VFDs. ILP Nos. 3 and 4 feed Aeration Deck Nos. 3 and 4, while ILP No. 7 is a swing pump and can be used to transfer wastewater to Aeration Deck Nos. 2, 3, or 4.

**Project Title:** WRRF Aeration Improvements 1 and 2

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**Primary Driver:** 3 - Regulatory

**Driver Explanation:**

System is required to meet permit

**Project Title:** WRRF Aeration Improvements 1 and 2

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**Scoring****Project Manager Weighted Score:** 76.30

Criteria Name	Score	Comment
Condition	4	Asset equipment remain the same, Condition remains the same
Performance (Service Level/Reliability)	3	Asset equipment remain the same, Performance remains the same
Regulatory (Environmental/Legal)	4	Asset equipment remain the same, Regulatory issues remain the same
Operations and Maintenance	3	Asset equipment remain the same, O&M risks remain the same
Health and Safety	3	Asset equipment remain the same, Public Health risks remain the same
Public Benefit	3	Asset equipment remain the same, Public Benefit risks remain the same
Financial	3	Asset equipment remain the same, Financial risks remain the same
Efficiency and Innovation	4	Asset equipment remain the same, Efficiency and Innovation remain the same

**Risk Committee Weighted Score:** 76.30

Criteria Name	Score	Comment
Condition	4	Scores carried over from previous year
Performance (Service Level/Reliability)	3	Scores carried over from previous year
Regulatory (Environmental/Legal)	4	Scores carried over from previous year
Operations and Maintenance	3	Scores carried over from previous year
Health and Safety	3	Scores carried over from previous year
Public Benefit	3	Scores carried over from previous year
Financial	3	Scores carried over from previous year
Efficiency and Innovation	4	Scores carried over from previous year

**Project Title:** WRRF Aeration Improvements 1 and 2

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	7/24/2020
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	5/31/2030
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	No
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 3	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b> 10/1/2018	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$1,719	\$583	\$583	\$0	\$0	\$284	\$73	\$98	\$98	\$555	\$581

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	6/1/2023	5/31/2030
Capital Delivery Salary	6/1/2023	5/31/2030
Professional Services (CS-272 - 72016A.01 / 72021A.04 / 72007B.06)	7/24/2020	12/23/2021



**Project Title:** WRRF Aeration Improvements 1 and 2

**Phase:** Study & Design & Construction Assistance # 1

**Phase Title:** WRRF Rehabilitation of Intermediate Lift Pumps (ILPs)

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	6/1/2023
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	6/29/2029
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 4	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b> Ali Khraizat

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Study &amp; Design &amp; Construction Assistance # 1</b>	\$8,715	\$0	\$0	\$0	\$0	\$1,215	\$2,571	\$2,571	\$2,357	\$8,715	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	6/1/2023	6/29/2029

**Project Title:** WRRF Aeration Improvements 1 and 2

**Phase:** Construction (Build) # 1

**Phase Title:** WRRF Rehabilitation of Intermediate Lift Pumps (ILPs)

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	6/1/2025
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	5/31/2030
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 4	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b> 10/2/2017	<b>Cost Est. Prepared By:</b> Ali Khraizat

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Construction (Build) # 1</b>	\$63,448	\$0	\$0	\$0	\$0	\$10,638	\$10,613	\$10,613	\$31,864	\$31,584

**Phase Dates**

Activity Name	Start Date	End Date
Construction	6/1/2025	5/31/2030

**Project Title:** WRRF Aeration Improvements 1 and 2

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**Phase:** Miscellaneous**Phase Title:** Miscellaneous

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**Phase Budget:** Wastewater**Start Date:** 7/1/2020**Phase Status:****End Date:** 6/30/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** Yes**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** WRRF Aeration Improvements 1 and 2

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>5 Year Total</b>	<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>Total</b>
2019	\$13,707	\$230	\$1,141	\$6,569	\$5,767	\$6,809	\$0	\$0	\$0	\$20,516
2020	\$14,022	\$229	\$500	\$656	\$6,727	\$5,910	\$6,811	\$0	\$0	\$20,833
2021	\$76,182	\$183	\$4,612	\$7,977	\$7,619	\$40,638	\$15,336	\$5,149	\$0	\$81,514
2022	\$65,328	\$16	\$2,264	\$2,566	\$5,391	\$19,423	\$19,370	\$18,576	\$14,323	\$81,931

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<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>5 Year Total</b>	<b>FY28+</b>
\$73,884,364	\$583,363	\$0	\$0	\$1,500,000	\$13,283,371	\$13,283,371	\$13,069,085	\$41,135,826	\$32,165,174

**Description of CIP Changes:**

Changed timing to Design Build delivery method

**Project Title:** WRRF Aeration Improvements 3 and 4

**Project Status:** Future Planned - Within 5 Year Plan

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** WRRF

**Class Lvl 3:** Secondary Treatment and Disinfection

☐ **Project New to CIP**

- ☒ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☒ **Predecessor Project(s)**



Aeration Basin 4, and ILP's 3, 4, and 7

**Project Engineer/Manager:** Chris Wilson

**Director:** Dan Alford

**Managing Dept.:** WW Design Eng

**Date Original Business Case Prepared:** 8/7/2019

**Year Project Added to CIP:** 2019

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** WRRF

**Funds and Cost Center:** Wastewater - 5421-892211

### Problem Statement:

The ILPs convey primary effluent to the secondary bioreactors (aeration decks). These pumps have reached their useful life and are in need of replacement. The pump selection is integrally connected to improvements in the aeration decks related to the conversion to biological phosphorus removal, implementation of step feed and overall improved hydraulic control in the aeration decks and flow control through the secondary system. Implementation of biological phosphorus removal will reduce oxygen and chemical use resulting in a more sustainable treatment system, and implementation of step feed will improve high flow management through the secondary system increasing the volume of flow that can be treated through the secondary system thus minimizing the volume of flow discharged without secondary system. Hydraulic improvements will ease operations and minimize the operator attention on the numerous surface aerators.

### Scope of Work/Project Alternatives:

The work consists of evaluation, design and construction of the replacement of ILPs 3, 4 & 7, conversion of aeration decks 3 & 4 to incorporate biological phosphorus removal, including replacement of mixers in Bays 1 and 2, relocation of the oxygen feed, and a new purge blower. Incorporation of step feed includes modification of the influent conditions to allow primary effluent to be directed to Bay 1, as well as two other locations down the length of the tank. An assessment of reconfiguring decks 3 and 4 to four independent decks will also be assessed. Weir length will be increased to reduce the variation in the hydraulic grade line across the tank to maintain adequate submergence of mixer/aerators and reduce the frequency of mixer/aerators tripping out on surge. Replacement of Mixer/aerators in Decks 3 through 8 will be evaluated and could be included as an add-alternate to the contract or included as a separate contract.

### Other Important Info:

Maintaining the MDEQ-NPDES required capacity during the construction phase of the project.

**Primary Driver:** 3 - Regulatory

### Driver Explanation:

System required to meet permit

**Project Title:** WRRF Aeration Improvements 3 and 4

### Scoring

**Project Manager Weighted Score:** 76.30

Criteria Name	Score	Comment
Condition	4	Asset equipment remain the same, Condition remains the same
Performance (Service Level/Reliability)	3	Asset equipment remain the same, Performance remains the same
Regulatory (Environmental/Legal)	4	Asset equipment remain the same, Regulatory issues remain the same
Operations and Maintenance	3	Asset equipment remain the same, O&M risks remain the same
Health and Safety	3	Asset equipment remain the same, Public Health risks remain the same
Public Benefit	3	Asset equipment remain the same, Public Benefit risks remain the same
Financial	3	Asset equipment remain the same, Financial risks remain the same
Efficiency and Innovation	4	Asset equipment remain the same, Efficiency and Innovation remain the same

**Risk Committee Weighted Score:** 76.30

Criteria Name	Score	Comment
Condition	4	Scores carried over from previous year
Performance (Service Level/Reliability)	3	Scores carried over from previous year
Regulatory (Environmental/Legal)	4	Scores carried over from previous year
Operations and Maintenance	3	Scores carried over from previous year
Health and Safety	3	Scores carried over from previous year
Public Benefit	3	Scores carried over from previous year
Financial	3	Scores carried over from previous year
Efficiency and Innovation	4	Scores carried over from previous year

**Project Title:** WRRF Aeration Improvements 3 and 4

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	6/1/2030
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	12/1/2036
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	No
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b>	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$355	\$0	\$0	\$0	\$0	\$0	\$0	\$125

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	6/1/2030	12/1/2036
Capital Delivery Salary	6/1/2030	12/1/2036
Contractual Professional Services	6/1/2030	12/1/2036
Other Capital Improvement Costs	6/1/2030	12/1/2036
Capitalized Interest	6/1/2030	12/1/2036

**Project Title:** WRRF Aeration Improvements 3 and 4

**Phase:** Design & Construction Assistance # 1

**Phase Title:** WRRF Rehabilitation of Intermediate Lift Pumps (ILPs) 3,4 and 7

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	6/1/2030
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	5/30/2036
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b>	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY26	FY27	5 Year Total	FY28+
<b>Design &amp; Construction Assistance # 1</b>	\$14,701	\$0	\$0	\$0	\$0	\$0	\$8,874

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	6/1/2030	5/30/2036



**Project Title:** WRRF Aeration Improvements 3 and 4

**Phase:** Construction (Build) # 1

**Phase Title:** WRRF Rehabilitation of Intermediate Lift Pumps (ILPs) 3,4 and 7

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	1/1/2033
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	12/1/2036
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b>	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY28+
<b>Construction (Build) # 1</b>	\$51,925	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Construction	1/1/2033	12/1/2036

**Project Title:** WRRF Aeration Improvements 3 and 4

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>5 Year Total</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>Total</b>
2021	\$14	\$14	\$73,749	\$0	\$73,763
2022	\$1,291	\$52	\$1,238	\$2,960	\$73,589

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<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>5 Year Total</b>	<b>FY28+</b>
\$66,982,999	\$0	\$0	\$0	\$0	\$0	\$9,000,000

**Description of CIP Changes:**

Updated project timing

**Project Title:** WRRF Conversion of Disinfection of all Flow to Sodium Hypochlorite and Sodium Bisulfite

**Project Status:** Future Planned - Within 5 Year Plan

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** WRRF

**Class Lvl 3:** Secondary Treatment and Disinfection

☐ **Project New to CIP**

- ☒ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



Chlorination Building, Inside

**Project Engineer/Manager:** TBD

**Director:** Dan Alford

**Managing Dept.:** WW Design Eng

**Date Original Business Case Prepared:** 8/7/2019

**Year Project Added to CIP:** 2019

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** WRRF

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

With the completion of the RRO Disinfection Project (CIP 212006), storage and feed of sodium hypochlorite to the primary effluent bypass with sodium bisulfite for dechlorination has been enabled. Elimination of the use of gaseous chlorine for disinfection of the secondary effluent and replacement with sodium hypochlorite will increase operator and public safety in and around the plant site.

**Scope of Work/Project Alternatives:**

The work consists of evaluation of sodium hypochlorite and sodium bisulfite usage over the first three years of operation of the new system to assess actual dosage required to achieve permit compliance and storage available with the existing system. The assessment will include preliminary design of modifications required to enable sodium hypochlorite feed to the secondary treatment effluent and an assessment of the storage requirements at varying sodium hypochlorite concentrations. The assessment will also include the appetite for a chemical manufacturer to own and operate a sodium hypochlorite generation facility in close proximity to the facility that would allow piping of sodium hypochlorite to the site (in lieu of providing additional storage, if required, on-site).

**Other Important Info:**

None

**Primary Driver:** 5 - Public Health and Safety

**Driver Explanation:**

Inherently, the system is hazardous to operate and maintain.

**Project Title:** WRRF Conversion of Disinfection of all Flow to Sodium Hypochlorite and Sodium Bisulfite

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**Scoring****Project Manager Weighted Score:** 89.70

Criteria Name	Score	Comment
Condition	2	Asset equipment remain the same, Condition remains the same
Performance (Service Level/Reliability)	2	Asset equipment remain the same, Performance remains the same
Regulatory (Environmental/Legal)	4	Asset equipment remain the same, Regulatory issues remain the same
Operations and Maintenance	4	Asset equipment remain the same, O&M risks remain the same
Health and Safety	5	Asset equipment remain the same, Public Health risks remain the same
Public Benefit	4	Asset equipment remain the same, Public Benefit risks remain the same
Financial	2	Asset equipment remain the same, Financial risks remain the same
Efficiency and Innovation	2	Asset equipment remain the same, Efficiency and Innovation remain the same

**Risk Committee Weighted Score:** 89.70

Criteria Name	Score	Comment
Condition	2	Scores carried over from previous year
Performance (Service Level/Reliability)	2	Scores carried over from previous year
Regulatory (Environmental/Legal)	4	Scores carried over from previous year
Operations and Maintenance	4	Scores carried over from previous year
Health and Safety	5	Scores carried over from previous year
Public Benefit	4	Scores carried over from previous year
Financial	2	Scores carried over from previous year
Efficiency and Innovation	2	Scores carried over from previous year

**Project Title:** WRRF Conversion of Disinfection of all Flow to Sodium Hypochlorite and Sodium Bisulfite

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	1/1/2029
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	11/30/2035
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	No
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b>	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$309	\$0	\$0	\$0	\$0	\$0	\$0	\$145

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	1/1/2029	11/30/2035
Capital Delivery Salary	1/1/2029	11/30/2035
Contractual Professional Services	1/1/2029	11/30/2035
Other Capital Improvement Costs	1/1/2029	11/30/2035
Capitalized Interest	1/1/2029	11/30/2035

**Project Title:** WRRF Conversion of Disinfection of all Flow to Sodium Hypochlorite and Sodium Bisulfite

**Phase:** Design & Construction Assistance # 1

**Phase Title:** WRRF Conversion of Disinfection of all Flow to Sodium Hypochlorite and Sodium Bisulfite

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	1/1/2029
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	11/30/2035
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b>	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY26	FY27	5 Year Total	FY28+
<b>Design &amp; Construction Assistance # 1</b>	\$838	\$0	\$0	\$0	\$0	\$0	\$838

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	1/1/2029	11/30/2035

**Project Title:** WRRF Conversion of Disinfection of all Flow to Sodium Hypochlorite and Sodium Bisulfite

**Phase:** Construction (Build) # 1

**Phase Title:** WRRF Conversion of Disinfection of all Flow to Sodium Hypochlorite and Sodium Bisulfite

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	6/1/2031
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	11/30/2035
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b>	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY28+
<b>Construction (Build) # 1</b>	\$4,308	\$0	\$0	\$783

**Phase Dates**

Activity Name	Start Date	End Date
Construction	6/1/2031	11/30/2035

**Project Title:** WRRF Conversion of Disinfection of all Flow to Sodium Hypochlorite and Sodium Bisulfite

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>5 Year Total</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>Total</b>
2021	\$14	\$14	\$5,972	\$0	\$5,986
2022	\$185	\$52	\$132	\$238	\$5,765

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<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>5 Year Total</b>	<b>FY28+</b>
\$5,456,001	\$0	\$0	\$0	\$0	\$0	\$1,766,614

**Description of CIP Changes:**

Updates timing



**Project Title:** WRRF Improvements to Sludge Feed Pumps at Dewatering Facilities

**Project Status:** Project Execution - Design

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** WRRF

**Class Lvl 3:** Residuals Management

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



Sludge Feed pump in Complex A

**Project Engineer/Manager:** Chris Wilson

**Director:** Dan Alford

**Managing Dept.:** WW Design Eng

**Date Original Business Case Prepared:** 7/27/2016

**Year Project Added to CIP:** 2016

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** WRRF

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

Improved sludge feed pumping system will provide wide range of operating conditions. Variable Frequency drive and Hydraulic drive units for SFP 1 and 2 are located below grade and the area has flooded. A single recycle valve for SFP 3 and 4 puts the plant at a higher risk for system outages.

**Scope of Work/Project Alternatives:**

The scope of work includes study, design, and construction for the replacement of sludge feed pumps SFP 1, 2, 3, 4, 5 and 6 and other modifications to the pumping system at the WRRF.

**Other Important Info:**

Challenges: Maintaining Plant Operational Capacity during construction.

Project History: Water Resource Recovery Facility (WRRF) has six (6) Sludge Storage Tanks (SST-1, 2, 3, 4, 5 & 6), which feed sludge to the dewatering facilities (i.e. belt filter presses complexes and complex II centrifuges.) Typically, sludge from Storage Tanks 1 & 2 supplies the centrifuges on dewatering complex II upper level; sludge from Storage Tanks 3 & 4 supplies the centrifuges on the lower level of Dewatering Complex II; and sludge from Storage Tanks 5 & 6 supplies the belt filter presses in Dewatering Complex I. However, control valves in the Dewatering Complex II basement allow sludge from any storage tanks to supply any Dewatering area. Under Contract PC-792, Storage Tanks SST-3 & 4 along with Sludge Feed Pumps SFP-3 & 4 are to be dedicated to BDF Facility.

**Primary Driver:** 2 - Performance

**Driver Explanation:**

Location of pumps have proven to be problematic due to flooding.

**Project Title:** WRRF Improvements to Sludge Feed Pumps at Dewatering Facilities

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### Scoring

**Project Manager Weighted Score:** 75.30

Criteria Name	Score	Comment
Condition	3	Replacing SFP-2 with smaller right sized pump.
Performance (Service Level/Reliability)	3	Asset equipment remain the same, Performance remains the same
Regulatory (Environmental/Legal)	4	Asset equipment remain the same, Regulatory issues remain the same
Operations and Maintenance	4	Added bypass around control valve
Health and Safety	2	Asset equipment remain the same, Public Health risks remain the same
Public Benefit	2	Asset equipment remain the same, Public Benefit risks remain the same
Financial	4	Asset equipment remain the same, Financial risks remain the same
Efficiency and Innovation	4	Asset equipment remain the same, Efficiency and Innovation remain the same

**Risk Committee Weighted Score:** 76.60

Criteria Name	Score	Comment
Condition	4	Scores carried over from previous year
Performance (Service Level/Reliability)	3	Scores carried over from previous year
Regulatory (Environmental/Legal)	4	Scores carried over from previous year
Operations and Maintenance	5	Scores carried over from previous year
Health and Safety	2	Scores carried over from previous year
Public Benefit	2	Scores carried over from previous year
Financial	4	Scores carried over from previous year
Efficiency and Innovation	4	Scores carried over from previous year

**Project Title:** WRRF Improvements to Sludge Feed Pumps at Dewatering Facilities

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	5/7/2020
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	4/1/2026
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	No
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 5	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$428	\$194	\$194	\$36	\$36	\$20	\$45	\$95	\$0	\$198	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	8/1/2022	4/1/2026
Capital Delivery Salary	8/1/2022	4/1/2026
Professional Services (CS-272 - 72014A.05 / 72021A.05)	5/7/2020	5/6/2022

**Project Title:** WRRF Improvements to Sludge Feed Pumps at Dewatering Facilities

**Phase:** Study & Design & Construction Assistance # 1

**Phase Title:** Improvements to Sludge Feed Pumps at Dewatering Facilities

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	8/1/2022
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	4/1/2026
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 4	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b> 10/2/2017	<b>Cost Est. Prepared By:</b> Ali Khraizat

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total
<b>Study &amp; Design &amp; Construction Assistance # 1</b>	\$2,596	\$0	\$0	\$363	\$713	\$750	\$383	\$384	\$2,232

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	8/1/2022	4/1/2026

**Project Title:** WRRF Improvements to Sludge Feed Pumps at Dewatering Facilities

**Phase:** Construction (Build) # 1

**Phase Title:** Improvements to Sludge Feed Pumps at Dewatering Facilities

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	4/1/2024
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	4/1/2026
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 4	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b> 10/2/2017	<b>Cost Est. Prepared By:</b> Ali Khraizat

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total
<b>Construction (Build) # 1</b>	\$4,069	\$0	\$0	\$0	\$0	\$1,645	\$1,237	\$1,186	\$4,069

**Phase Dates**

Activity Name	Start Date	End Date
Construction	4/1/2024	4/1/2026

**Project Title:** WRRF Improvements to Sludge Feed Pumps at Dewatering Facilities

**Phase:** Miscellaneous

**Phase Title:** Miscellaneous

**Phase Budget:** Wastewater

**Start Date:** 7/1/2020

**Phase Status:**

**End Date:** 6/30/2021

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** WRRF Improvements to Sludge Feed Pumps at Dewatering Facilities

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2018	\$1,152	\$33	\$402	\$750	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,185
2019	\$3,853	\$4	\$0	\$0	\$57	\$275	\$2,391	\$1,130	\$0	\$0	\$0	\$0	\$3,857
2020	\$1,390	\$0	\$5	\$0	\$0	\$0	\$0	\$24	\$1,366	\$2,331	\$0	\$0	\$3,726
2021	\$4,646	\$0	\$0	\$5	\$0	\$174	\$385	\$3,371	\$716	\$0	\$0	\$0	\$4,651
2022	\$4,376	\$0	\$0	\$0	\$6	\$108	\$342	\$2,252	\$1,781	\$0	\$0	\$0	\$4,490

**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$7,094,357	\$194,357	\$400,001	\$750,000	\$2,416,667	\$1,666,667	\$1,666,666	\$0	\$6,500,001	\$0

**Description of CIP Changes:**

Updated Scoring based on mitigation projects, updated timeline

**Project Title:** WRRF Modification to Incinerator Sludge Feed Systems at Complex -II

**Project Status:** Project Execution - Construction

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** WRRF

**Class Lvl 3:** Residuals Management

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**


**Project Engineer/Manager:** Chris Breinling

**Director:** Philip Kora

**Managing Dept.:** WW Construction Eng

**Date Original Business Case Prepared:**  
 7/27/2016

**Year Project Added to CIP:** 2016

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** WRRF

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

GLWA have an ongoing study and design of sludge cake conveyance system improvements project after the March 4, 2016 fire incident in Complex -II Incinerators building. The construction of this project will provide a cleaner, fire resistant, reliable and safe sludge feed to the incinerators.

**Scope of Work/Project Alternatives:**

The restoration of sludge conveying capacity, which was lost due to the fire damage and to provide improved sludge conveyance from each dewatering facility to the incinerators. Replacement of 19 MCCs and Replacement of the Unit Substation EB-26 in Incineration Complex II.

**Other Important Info:**

Challenges: Maintaining the sludge conveyance capacity to meet permit requirements during the construction of these improvements, will be the most significant challenge on this project.

Project History: The C-II Incineration complex is over 40 years old. Major rehabilitation had been deferred over the years in anticipation of an alternative Biosolids disposal solution to handle all the solids. The Complex-II have many major pieces of equipment that are nearing the end of their useful life and require replacement or major rehabilitation in order to be used as the primary long-term solids disposal method. GLWA approved a PC-774 and PC-791 contract to rehabilitate some of the aging problem of the incineration and to meet the new air permit requirements. GLWA just completed the construction of a Biosolids Dryer Facility (BDF) with a firm capacity of 316 dry tons per day. The BDF facility is currently in operation under an in-term agreement with NEFCO. The current GLWA plan for Biosolids disposal is to utilize BDF to its capacity first, then send the additional load to Complex-II Incinerators and anything beyond that to the land fill. This Biosolids Disposal Plan requires investment in the Complex-II Incinerators to process the sludge loads on a



**Project Title:** WRRF Modification to Incinerator Sludge Feed Systems at Complex -II

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regular basis for the daily and wet weather events to avoid the highest cost of land fill.

The sludge from Dewatering Complex II travels through a series of conveyor belts (i.e., conveyors G, H and J) before it reaches Incineration Complex II. The sludge from Dewatering Complex II Lower Level was transported by Conveyor G to Conveyor H. In Incinerator Complex II, Conveyor H branches to Conveyors K and L then continue to various conveyors to feed incinerators. The sludge from Dewatering C-II Upper Level was transported by Conveyor J which branches to Conveyors M and N in Incineration C-II then continue to various Conveyors to feed incinerators. The conveyor belt structures in Incineration C-II are old, have been modified, rebuilt or repaired several times that might have altered the overall integrity of the structures. The existing "Dusseau" hopper oftentimes plugged resulting to sludge spillage. The existing feed system to the incinerator from the hoppers should be redesigned and replaced. New control systems, safeguards, provision of SFE water, run time meter or tie to ovation system and poor lighting system in the complex needs improvement. Drainage problems had historically existed within the basement of Complex II Incineration and C-II Dewatering having to do with both building drainage, and filtrate drainage. These problems led to excessive demands on operations and maintenance staff, shutdown of process-related equipment, and safety concerns for WWTP personnel. Improvements to the C-II Incinerators building drainage system were completed in 2003 under contract DWP-1028. However, the drainage problems were not completely eliminated and still continue to exist and further Improvements to the C-II Dewatering are in design for improvements. In order to have an effective sludge conveyer's wash system, a key requirement for safe operation of sludge conveyance system, the drainage improvements in the Complex-II Dewatering and Incinerators building are essential.

**Primary Driver:** 3 - Regulatory

**Driver Explanation:**

The existing sludge conveyance system is very old and is critical to disposal of biosolids to meet permit requirements (e.g. incinerator air permit requirements). The disposal of biosolids to meet allowable permitted inventory of biosolids at the WRRF, s

**Project Title:** WRRF Modification to Incinerator Sludge Feed Systems at Complex -II

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**Scoring****Project Manager Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Risk Committee Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Project Title:** WRRF Modification to Incinerator Sludge Feed Systems at Complex -II

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	8/22/2016
<b>Phase Status:</b>	Active	<b>End Date:</b>	6/30/2022
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	No
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 3	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b> 7/31/2019	<b>Cost Est. Prepared By:</b> PMA

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$711	\$556	\$556	\$155	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	8/22/2016	6/30/2022
Capital Delivery Salary	8/22/2016	6/30/2022
Contractual Professional Services	8/22/2016	6/30/2022
Other Capital Improvement Costs	8/22/2016	6/30/2022
Capitalized Interest	8/22/2016	6/30/2022

**Project Title:** WRRF Modification to Incinerator Sludge Feed Systems at Complex -II

**Phase:** Study & Design & Construction Assistance # 1 (CS-060, CS-291, CS-1432A)

**Phase Title:** Study/Design of upgraded sludge conveyance system and lighting improvement

<b>Phase Budget:</b> Wastewater	<b>Start Date:</b> 8/22/2016
<b>Phase Status:</b> Active	<b>End Date:</b> 6/30/2022
<b>Cost Allocation:</b> CTA	<b>Fund:</b> N/A - Not Applicable
<b>Funding Source:</b> Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b> Yes
<b>Tot. Federal Loan Amount:</b> \$0.00	

**Phase Comments/Description:**

CS-060 is funded from this CIP. Could not add it to the choice list. Move this phase to 213007

<b>Cost Est. Class:</b> Class 5	<b>Cost Est. Source:</b> Contract
<b>Cost Est. Date:</b> 7/31/2019	<b>Cost Est. Prepared By:</b> PMA

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Study &amp; Design &amp; Construction Assistance # 1 (CS-060, CS-291, CS-1432A)</b>	\$2,302	\$788	\$788	\$1,514	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (CS-060)	8/22/2016	6/30/2022
Design/Engineering (CS-291)	7/1/2018	1/29/2021
Design/Engineering (CS-1432A)	7/1/2017	6/29/2018
Design/Engineering (MISC)	7/1/2017	6/30/2018

**Project Title:** WRRF Modification to Incinerator Sludge Feed Systems at Complex -II

**Phase:** Construction (Build) # 1 (CON-197)

**Phase Title:** CON-197 Modification to Incinerator Sludge Feed Systems at Complex -II

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	4/2/2018
<b>Phase Status:</b>	Active	<b>End Date:</b>	6/30/2022
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 1	<b>Cost Est. Source:</b> Contract
<b>Cost Est. Date:</b> 7/31/2019	<b>Cost Est. Prepared By:</b> PMA

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Construction (Build) # 1 (CON-197)</b>	\$19,336	\$17,316	\$17,316	\$2,019	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Construction	4/2/2018	6/30/2022

**Project Title:** WRRF Modification to Incinerator Sludge Feed Systems at Complex -II

**Phase:** Miscellaneous

**Phase Title:** Miscellaneous

**Phase Budget:** Wastewater

**Start Date:** 5/1/2010

**Phase Status:**

**End Date:** 6/30/2021

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	<b>Total Costs</b>	<b>Actual Costs</b>	<b>Prior FYs</b>
<b>Miscellaneous</b>	\$1,458	\$1,458	\$1,458

**Phase Dates**

<b>Activity Name</b>	<b>Start Date</b>	<b>End Date</b>
Pre-CAFR Actuals	5/1/2010	6/30/2015
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** WRRF Modification to Incinerator Sludge Feed Systems at Complex -II

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2018	\$17,422	\$1,500	\$9,600	\$7,822	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$18,922
2019	\$21,620	\$0	\$567	\$6,787	\$11,356	\$3,477	\$0	\$0	\$0	\$0	\$0	\$0	\$22,187
2020	\$12,019	\$0	\$871	\$7,159	\$8,711	\$3,308	\$0	\$0	\$0	\$0	\$0	\$0	\$20,049
2021	\$2,258	\$0	\$0	\$9,352	\$8,336	\$2,258	\$0	\$0	\$0	\$0	\$0	\$0	\$19,946
2022	\$2,500	\$0	\$871	\$8,456	\$6,094	\$4,243	\$2,500	\$0	\$0	\$0	\$0	\$0	\$22,162

**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$23,809,648	\$20,120,011	\$3,689,637	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Description of CIP Changes:**

Rehabilitation of incinerators 7-10 are almost complete and expected to perform the start up services likely in October 2020.

**Project Title:** WRRF Rehabilitation of the Ash Handling Systems

**Project Status:** Future Planned - Within 5 Year Plan

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** WRRF

**Class Lvl 3:** Residuals Management

☐ **Project New to CIP**

- ☒ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



Incineration Complex II, Ash System

**Project Engineer/Manager:** Chris Wilson

**Director:** Dan Alford

**Managing Dept.:** WW Design Eng

**Date Original Business Case Prepared:**  
7/27/2016

**Year Project Added to CIP:** 2017

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** WRRF

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

The ash systems convey and store ash for ultimate disposal. The incinerators cannot be used if both the systems are not working.

**Scope of Work/Project Alternatives:**

The scope of work will include study, design, and construction for the rehabilitation of the wet and dry ash systems. The scope will also include the piping, valves, isolation gates, vacuum pumps, air filters, HVAC, boilers, miscellaneous silo repairs (concrete, access, etc.) site work and drainage, and miscellaneous structural repairs (foot bridge, spalling concrete, etc.) at the dry ash handling system. It will also include the pumps, piping, and sluicing system at the wet ash system.

**Other Important Info:**

\*Innovation note: Due to only 10-15 years remaining useful life on Complex I, reconsider recommissioning wet ash. Recom.

**Project History:** The C-I and C-II Incinerators have been the primary source for processing Biosolids at the GLWA WRF since the plant was first built. The original ash handling system was a wet ash/sluicing process. The dry ash system was constructed in the 1960s and expanded with the construction of the C-II Incinerators in the 1970s. The wet ash system has not been in use for over five years and there is no backup if the dry ash system goes down. The C-I Incinerators are planned to be decommissioned in the next year or two and there is a potential to link the C-I ash handling system to the C-II system to provide extra storage.

**Primary Driver:** 1 - Condition

**Driver Explanation:**

The wet ash system has been out of service for over five years and the dry ash system is nearing the end of its useful life.



**Project Title:** WRRF Rehabilitation of the Ash Handling Systems

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**Scoring****Project Manager Weighted Score:** 57.80

Criteria Name	Score	Comment
Condition	3	Fixing leaks and replacing valves
Performance (Service Level/Reliability)	2	Fixing piping and bridge
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	4	
Health and Safety	3	
Public Benefit	1	
Financial	3	
Efficiency and Innovation	1	

**Risk Committee Weighted Score:** 59.50

Criteria Name	Score	Comment
Condition	4	Scores carried over from previous year
Performance (Service Level/Reliability)	3	Scores carried over from previous year
Regulatory (Environmental/Legal)	3	Scores carried over from previous year
Operations and Maintenance	4	Scores carried over from previous year
Health and Safety	3	Scores carried over from previous year
Public Benefit	1	Scores carried over from previous year
Financial	3	Scores carried over from previous year
Efficiency and Innovation	1	Scores carried over from previous year

**Project Title:** WRRF Rehabilitation of the Ash Handling Systems

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	7/1/2027
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	1/1/2030
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	No
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 5	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b> 10/1/2017	<b>Cost Est. Prepared By:</b> Ali Khraizat

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$253	\$26	\$26	\$0	\$0	\$0	\$0	\$37	\$38	\$75	\$151

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2027	1/1/2030
Capital Delivery Salary	7/1/2027	1/1/2030

**Project Title:** WRRF Rehabilitation of the Ash Handling Systems

**Phase:** Study # 1 (1803499)

**Phase Title:** Rehabilitation of the Ash Handling Systems

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	10/16/2019
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	8/31/2021
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 5	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b> 9/12/2018	<b>Cost Est. Prepared By:</b> Ali Khraizat

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total
<b>Study # 1 (1803499)</b>	\$1,049	\$125	\$125	\$0	\$0	\$0	\$0	\$462	\$461	\$924

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (1803499)	10/16/2019	8/31/2021

**Project Title:** WRRF Rehabilitation of the Ash Handling Systems

**Phase:** Construction (Build) # 1

**Phase Title:** Rehabilitation of the Ash Handling Systems

<b>Phase Budget:</b> Wastewater	<b>Start Date:</b> 7/1/2027
<b>Phase Status:</b> Future Planned Start	<b>End Date:</b> 1/1/2030
<b>Cost Allocation:</b> CTA	<b>Fund:</b> N/A - Not Applicable
<b>Funding Source:</b> Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b> Yes
<b>Tot. Federal Loan Amount:</b> \$0.00	

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 4	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b> 10/2/2017	<b>Cost Est. Prepared By:</b> Ali Khraizat

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Construction (Build) # 1</b>	\$5,048	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,048

**Phase Dates**

Activity Name	Start Date	End Date
Construction	7/1/2027	1/1/2030

**Project Title:** WRRF Rehabilitation of the Ash Handling Systems

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**Phase:** Miscellaneous**Phase Title:** Miscellaneous

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**Phase Budget:** Wastewater**Start Date:** 7/1/2020**Phase Status:****End Date:** 6/30/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** Yes**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** WRRF Rehabilitation of the Ash Handling Systems

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2018	\$18,316	\$530	\$1,045	\$6,225	\$5,725	\$4,791	\$0	\$0	\$0	\$0	\$0	\$18,316
2019	\$11,286	\$0	\$0	\$687	\$916	\$3,614	\$6,069	\$9,330	\$0	\$0	\$0	\$20,616
2020	\$18,505	\$0	\$0	\$111	\$1,111	\$5,525	\$9,574	\$2,184	\$0	\$0	\$0	\$18,505
2021	\$18,377	\$0	\$0	\$166	\$1,338	\$636	\$11,061	\$5,342	\$0	\$0	\$0	\$18,543
2022	\$6,540	\$0	\$0	\$111	\$351	\$295	\$295	\$453	\$1,518	\$3,978	\$1,429	\$8,432

**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$6,351,059	\$151,058	\$0	\$0	\$0	\$0	\$500,000	\$500,000	\$1,000,000	\$5,200,000

**Description of CIP Changes:**

Study phase was added on its own to evaluate options prior to design. The schedule was delayed by 1 FY.

**Project Title:** WRRF Biosolids Processing Improvements

**Project Status:** Future Planned - Within 5 Year Plan

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** WRRF

**Class Lvl 3:** Residuals Management

☒ **Project New to CIP**

- ☐ **Innovation**
- ☒ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



**Project Engineer/Manager:** Chris Wilson

**Director:** Navid Mehran

**Managing Dept.:** WW Design Eng

**Date Original Business Case Prepared:**

**Year Project Added to CIP:** 2021

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** WRRF

**Funds and Cost Center:** Wastewater - 5421-892111

**Problem Statement:**

The COF includes three trains of live bottom sludge storage bins, lime silos, sludge/lime mixers and numerous belt and screw conveyors ultimately for truck loading. Lime can be added for odor reduction and the sludge landfilled or stabilized and land applied.

The Complex I incinerators were constructed in 1940 and include six, 11 hearth units with capacity of 10 wet tons/hr. These were decommissioned under CIP-1284 in early 2017.

Complex II Incineration were constructed in the 1970s and consists of eight multiple hearth incinerators each containing 12 hearths with an outside diameter of 25'-9" as made by Nichols-Herreshoff. The rated capacity of each is 3.2 dry tons per hour (dtph). During the 2006 wet weather evaluation, the average unit capacity was reduced to 2.5 dtph, but increased back to rated capacity following the PC-791 upgrades. Thus, the firm C-II Incineration capacity is 461 dtph based on six of eight incinerators in service and a 25 percent TS feed cake concentration.

**Scope of Work/Project Alternatives:**

The project will construct one/or a mix of the following scenarios:

- 1.MAD of Thickened Primary Sludge (TPS) and Thickened Fermented Sludge (TFS) with centrifuge dewatering and drying at a rehabilitated BDF.
- 2.Sludge screening, pre-dewatering, and THP of FS and MAD of hydrolyzed sludge and TPS. Centrifuge dewatering and drying of the digested sludge at a rehabilitated BDF.
- 3.Identical to Alt 3, but only for sludge that comes from PS2. PS1 sludge would be sent to digested sludge storage tanks for dewatering and drying.
- 4.Expand the BDF to process all sludge without any THP or AD. This alternative was added after the previous alternatives had been evaluated. It does not include any acceptance of high strength feedstocks or struvite recovery like the other options.

**Other Important Info:**

The COF includes three trains of live bottom sludge storage bins, lime silos, sludge/lime mixers and numerous belt and screw conveyors ultimately for truck loading. Lime can be added for odor reduction and the sludge landfilled or stabilized and land applied.

The Complex I incinerators were constructed in 1940 and include six, 11 hearth units with capacity of 10 wet tons/hr. These were decommissioned under CIP-1284 in early 2017.

Complex II Incineration were constructed in the 1970s and consists of eight multiple hearth incinerators each containing 12 hearths with an outside diameter of 25'-9" as made by Nichols-Herreshoff. The rated capacity of each is 3.2 dry tons per hour (dtph). During the 2006 wet weather evaluation, the average unit capacity was reduced to 2.5 dtph, but increased back to rated capacity following the PC-791 upgrades. Thus, the firm C-II Incineration capacity is 461 dtph based on six of eight incinerators in service and a 25 percent TS feed cake concentration.

Sludge cake is discharged into the incinerators from the

**Project Title:** WRRF Biosolids Processing Improvements

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Sludge cake is discharged into the incinerators from the incinerator feed system, which consists of a live bottom hopper, transfer screw conveyors, a weighing belt conveyor, and a feed screw conveyor. From the incinerator feed system, the sludge enters the top of the incinerator and proceeds downward from one hearth to another as the sludge goes through the various stages of the combustion process, including drying, volatilization, burning of fixed carbon, ash cooling, and final discharge as ash.

incinerator feed system, which consists of a live bottom hopper, transfer screw conveyors, a weighing belt conveyor, and a feed screw conveyor. From the incinerator feed system, the sludge enters the top of the incinerator and proceeds downward from one hearth to another as the sludge goes through the various stages of the combustion process, including drying, volatilization, burning of fixed carbon, ash cooling, and final discharge as ash.

**Primary Driver:** 2 - Performance

**Driver Explanation:**

Improving plant operations by re-organizing workflow paths and space utilization.



**Project Title:** WRRF Biosolids Processing Improvements

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**Scoring****Project Manager Weighted Score:** 79.60

Criteria Name	Score	Comment
Condition	4	Incinerators have exceeded their design service life. Many facilities have retired their multiple hearth incinerators.
Performance (Service Level/Reliability)	4	Equipment has a high risk of failure
Regulatory (Environmental/Legal)	4	Equipment has a significant impact on permit when the equipment fails to work
Operations and Maintenance	5	Unsustainable level of O and M effort required to maintain the equipment
Health and Safety	4	Current equipment has been linked to two fires at the facility
Public Benefit	3	Project is part of the facilities strategic plan
Financial	3	Project will help in recovering resources from the waste streams
Efficiency and Innovation	4	The right sizing of the system and leveraging current processing methods will help us lead the industry in Water resource recovery

**Risk Committee Weighted Score:** 79.60

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	5	
Health and Safety	4	
Public Benefit	3	
Financial	3	
Efficiency and Innovation	4	

**Project Title:** WRRF Biosolids Processing Improvements

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

**Phase Budget:** Wastewater

**Start Date:** 2/6/2026

**Phase Status:**

**End Date:** 2/6/2039

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
<b>GLWA Salaries</b>	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	2/6/2026	2/6/2039
Capital Delivery Salary	2/6/2026	2/6/2039

**Project Title:** WRRF Biosolids Processing Improvements

**Phase:** Design/Engineering

**Phase Title:** Design/Engineering

**Phase Budget:** Wastewater

**Start Date:** 2/6/2026

**Phase Status:**

**End Date:** 2/6/2039

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Design/Engineering</b>	\$16,356	\$0	\$0	\$0	\$0	\$2,700	\$4,000	\$6,700	\$9,656

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	2/6/2026	2/6/2039

**Project Title:** WRRF Biosolids Processing Improvements

**Phase:** Construction

**Phase Title:** Construction

**Phase Budget:** Wastewater

**Start Date:** 7/1/2021

**Phase Status:**

**End Date:** 2/6/2039

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	<b>Total Costs</b>	<b>Actual Costs</b>	<b>Prior FYs</b>	<b>FY28+</b>
<b>Construction</b>	\$163,643	\$0	\$0	\$30,294

**Phase Dates**

<b>Activity Name</b>	<b>Start Date</b>	<b>End Date</b>
Construction	2/7/2031	2/6/2039
Construction Material / Equipment Purchase	7/1/2021	7/31/2021

**Project Title:** WRRF Biosolids Processing Improvements

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>
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Total Costs	Prior FYs	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$180,000,002	\$0	\$0	\$0	\$2,700,000	\$4,000,000	\$6,700,000	\$39,950,441

**Description of CIP Changes:**

Project added to CIP FY 23 AC.

**Project Title:** WRRF Relocation of Industrial Waste Control Division and Analytical Laboratory Operations

**Project Status:** Project Execution - Construction

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** WRRF

**Class Lvl 3:** Industrial Waste Control

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**


**Project Engineer/Manager:** Nicolas Nicolas

**Director:** Philip Kora

**Managing Dept.:** WW Construction Eng

**Date Original Business Case Prepared:** 10/12/2016

**Year Project Added to CIP:** 2014

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** System Wide

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

Laboratory Optimization, Continued operation of IWC and Lab, lease termination for analytical laboratory, and utilization of available space in WRRF NAB

**Scope of Work/Project Alternatives:**

Relocate Industrial Waste Control Division and Analytical Lab to New Administration Building at WRRF. Consolidate the existing Operations Lab with Analytical Lab.

**Other Important Info:**

Challenges: Maintaining the laboratory operations during relocation.

Project History: In accordance with the NPDES Permit, GLWA implements and enforces an Industrial Pretreatment Program (IPP), and regulates the discharge of wastewater from commercial and industrial sources throughout the service area. A key component of the IPP includes the performance of analytical testing on wastewater samples collected from industrial and commercial sources, in-system samples from the sewer system and other sources including groundwater and septage.

The Industrial Waste Control Division (IWC) is responsible for implementation of the IPP, and analytical services are obtained from the Analytical Laboratory located at the MCHT facility. IWC activities are housed at the Livernois Center Building (LCB) located at 303 S. Livernois, while the Analytical Laboratory leases space at the MCHT on Second Avenue.

The State of Michigan Department of Transportation and the Govt. of Canada have proposed to construct a new bridge crossing across the Detroit River, with a completion date of 2020. The Livernois Center Building lies within the

**Project Title:** WRRF Relocation of Industrial Waste Control Division and Analytical Laboratory Operations

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area designated for the Bridge and support services and need to be relocated. It would be desirable to relocate the laboratory facilities at the same time to optimize the operations and make use of underutilized GLWA facilities rather than lease space from a 3rd party.

**Primary Driver:** 3 - Regulatory

**Driver Explanation:**

Length and reorganization is yet established.

**Project Title:** WRRF Relocation of Industrial Waste Control Division and Analytical Laboratory Operations

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**Scoring****Project Manager Weighted Score:** 91.40

Criteria Name	Score	Comment
Condition	3	Scores carried over from 2021-2025 CIP
Performance (Service Level/Reliability)	4	Scores carried over from 2021-2025 CIP
Regulatory (Environmental/Legal)	5	Scores carried over from 2021-2025 CIP
Operations and Maintenance	2	Scores carried over from 2021-2025 CIP
Health and Safety	3	Scores carried over from 2021-2025 CIP
Public Benefit	3	Scores carried over from 2021-2025 CIP
Financial	3	Scores carried over from 2021-2025 CIP
Efficiency and Innovation	5	Scores carried over from 2021-2025 CIP

**Risk Committee Weighted Score:** 88.50

Criteria Name	Score	Comment
Condition	3	Scores carried over from 2021-2025 CIP
Performance (Service Level/Reliability)	2	Scores carried over from 2021-2025 CIP
Regulatory (Environmental/Legal)	5	Scores carried over from 2021-2025 CIP
Operations and Maintenance	2	Scores carried over from 2021-2025 CIP
Health and Safety	2	Scores carried over from 2021-2025 CIP
Public Benefit	3	Scores carried over from 2021-2025 CIP
Financial	3	Scores carried over from 2021-2025 CIP
Efficiency and Innovation	5	Scores carried over from 2021-2025 CIP



**Project Title:** WRRF Relocation of Industrial Waste Control Division and Analytical Laboratory Operations

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	10/12/2016
<b>Phase Status:</b>	Active	<b>End Date:</b>	5/30/2021
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	No
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 5	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22
<b>GLWA Salaries</b>	\$205	\$205	\$205	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	10/12/2016	5/30/2021
Capital Delivery Salary	10/12/2016	5/30/2021
Contractual Professional Services	10/12/2016	5/30/2021
Other Capital Improvement Costs	10/12/2016	5/30/2021
Capitalized Interest	10/12/2016	5/30/2021

**Project Title:** WRRF Relocation of Industrial Waste Control Division and Analytical Laboratory Operations

**Phase:** Design & Construction Assistance # 1 (CS-262, CS-1481, 1901083)

**Phase Title:** General Engineering Services for design of CON-280 and Analytical Lab (Sigma)

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	7/1/2016
<b>Phase Status:</b>	Active	<b>End Date:</b>	1/29/2021
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 1	<b>Cost Est. Source:</b> Contract
<b>Cost Est. Date:</b> 9/12/2018	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Design &amp; Construction Assistance # 1 (CS-262, CS-1481, 1901083)</b>	\$1,035	\$985	\$985	\$50	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (CS-262)	10/12/2016	6/30/2020
214001 Design/Engineering (1901083)	1/1/2021	1/29/2021
Design/Engineering (CON-280)	7/1/2017	6/29/2018
Design/Engineering (CS-1481)	7/1/2016	6/30/2017
Design/Engineering (MISC)	7/1/2017	6/30/2019

**Project Title:** WRRF Relocation of Industrial Waste Control Division and Analytical Laboratory Operations

**Phase:** Construction (Build) # 2 (1803776, CON-280)

**Phase Title:** Relocation of Analytical Lab

<b>Phase Budget:</b> Wastewater	<b>Start Date:</b> 6/25/2018
<b>Phase Status:</b> Active	<b>End Date:</b> 5/30/2021
<b>Cost Allocation:</b> CTA	<b>Fund:</b> N/A - Not Applicable
<b>Funding Source:</b> Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b> Yes
	<b>Tot. Federal Loan Amount:</b> \$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 3	<b>Cost Est. Source:</b> Eng Est.
<b>Cost Est. Date:</b> 9/12/2018	<b>Cost Est. Prepared By:</b> Ali Khraizat

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22
<b>Construction (Build) # 2 (1803776, CON-280)</b>	\$13,040	\$13,040	\$13,040	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Construction (1803776)	6/25/2018	5/30/2021
Construction (CON-280)	7/1/2018	6/28/2019

**Project Title:** WRRF Relocation of Industrial Waste Control Division and Analytical Laboratory Operations

**Phase:** Miscellaneous

**Phase Title:** Miscellaneous

**Phase Budget:** Wastewater

**Start Date:** 7/1/2020

**Phase Status:**

**End Date:** 6/30/2021

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** WRRF Relocation of Industrial Waste Control Division and Analytical Laboratory Operations

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2018	\$7,000	\$5,000	\$2,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,000
2019	\$12,765	\$0	\$4,001	\$7,764	\$1,000	\$0	\$0	\$0	\$0	\$0	\$0	\$12,947
2020	\$7,567	\$573	\$2,828	\$7,567	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$10,968
2021	\$1,331	\$0	\$2,301	\$10,369	\$1,331	\$0	\$0	\$0	\$0	\$0	\$0	\$14,001
2022	\$0	\$391	\$400	\$9,792	\$2,067	\$0	\$0	\$0	\$0	\$0	\$0	\$12,651

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$14,282,059	\$14,232,059	\$50,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Description of CIP Changes:**

Reallocated engineering services from CIP No. 380901 (contact was moved from as-needed to appropriate CIP). Separated IWC and Lab construction phases due to GHIB project schedule. IWC was relocated to WRRF. Relocation of analytical lab construction is progressing and is expected to be completed by end of 2020.

**Project Title:** Rehabilitation of Various Sampling Sites and PS#2 Ferric Chloride System at WRRF

**Project Status:** Project Execution - Construction

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** WRRF

**Class Lvl 3:** General Purpose

☐ **Project New to CIP**

- ☒ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**


**Project Engineer/Manager:** Ihsan Wahab

**Director:** Philip Kora

**Managing Dept.:** WW Construction Eng

**Date Original Business Case Prepared:**  
 8/1/2016

**Year Project Added to CIP:** 2010

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** WRRF

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

Rehabilitation of the sampling facilities will improve system reliability and allow for consistent and accurate sampling. This will help to submit an accurate report to MDEQ. The rehabilitation of Ferric Chloride system will improve the phosphorous removal to comply with the Permit.

**Scope of Work/Project Alternatives:**

The scope of work includes:  
 Replacement of existing sampling equipment, installing new samplers, pumps, piping, housing and support equipment such as I&C, HVAC, etc. at the various sampling sites.  
 The scope also include:  
 Replacement of existing two steel Ferric Chloride tanks at PS#2 with four (4) smaller tanks.  
 Provide new piping layout, gravity feed, and self-cleaning strainer.  
 Rehabilitate Ferric Chloride Unloading station, associated Valves and Appurtenances.  
 Provide Flow meters and new control strategies to meet future demands of Ferric Chloride at Pump Station # 2.  
 The CIP is for construction only.

**Other Important Info:**

\*Innovation note: Rehab may include alternative online/real-time sampling & analysis, as well as improved mixing of the ferric with primary influent.  
 The original CIP Project Proposal CIP-1223, "Rehabilitation of Grit and Screening System at PS-2 and Rehabilitation of Sampling Sites at WWTP" included two major scope items; Rehabilitation of Grit & Bar Screening System and Sampling Stations. That construction budget for CIP-1223 amount \$11 M was set aside in CIP. The design for Grit & Screening System and Sampling Station were complete under As Needed Engineering Services Contract, CS-1481 Task 18. The construction for "Rehabilitation of Sampling Sites" will move forward and be bid out separately for construction without Grit & Bar Screening System. The Bar Rack System and Grit System designed under As Needed Engineering Services Contract CS-1481, Task 18 will not proceed for construction as designed. An engineering decision to have a fresh look and start a new study, design and construction project through CIP-1314 will proceed. The proposed CIP budget is for construction cost only. The original budget for CIP-1223 was \$11M and has been reduced to \$5M. The remaining \$6M budget has been transferred to CIP-1314 to complete study, design and construction of Grit and

**Project Title:** Rehabilitation of Various Sampling Sites and PS#2 Ferric Chloride System at WRRF

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Screening System at PS#2.

Challenges: Maintaining the MDEQ-NPDES required capacity during the construction phase of the project.

Project History: The Sampling sites are located at Oakwood, MPI-2, NEIA, PEAS1, 3 & 4, ML1 thru 4, and RAS1 thru 4, C2SE 3& 4. Sampling is performed to monitor permit compliance and process performance. Samples are also collected and analyzed on composite samples. The above sampling stations are required to be rehabilitated or replaced for meeting the permit sampling requirements. These sampling stations regularly fails to collect samples due to the clogging problem in the sample line. Replacement of existing sampling equipment, installing new samplers, pumps, HVAC, etc. were also proposed through Need Assessment 2010 – 2016 for these sampling stations.

The WRRF sampling station rehabilitation design is completed under an As Needed Engineering Services. The WRRF PS# 2 Ferric Chloride rehabilitation design is completed under another As Needed Engineering Services Contract. These two projects are combined together for construction under the revised CIP #1223 in the 2018 CIP.

**Primary Driver:** 2 - Performance

**Driver Explanation:**

Plant operations report on the failure of shear pins and accelerated wearing and tearing of the bar racks causing downtime for the maintenance and violation of the permit.

**Project Title:** Rehabilitation of Various Sampling Sites and PS#2 Ferric Chloride System at WRRF**Scoring****Project Manager Weighted Score:** 94.70

Criteria Name	Score	Comment
Condition	5	Scores carried over from 2021-2025 CIP
Performance (Service Level/Reliability)	5	Scores carried over from 2021-2025 CIP
Regulatory (Environmental/Legal)	5	Scores carried over from 2021-2025 CIP
Operations and Maintenance	4	Scores carried over from 2021-2025 CIP
Health and Safety	3	Scores carried over from 2021-2025 CIP
Public Benefit	3	Scores carried over from 2021-2025 CIP
Financial	4	Scores carried over from 2021-2025 CIP
Efficiency and Innovation	3	Scores carried over from 2021-2025 CIP

**Risk Committee Weighted Score:** 94.70

Criteria Name	Score	Comment
Condition	5	Scores carried over from 2021-2025 CIP
Performance (Service Level/Reliability)	5	Scores carried over from 2021-2025 CIP
Regulatory (Environmental/Legal)	5	Scores carried over from 2021-2025 CIP
Operations and Maintenance	4	Scores carried over from 2021-2025 CIP
Health and Safety	3	Scores carried over from 2021-2025 CIP
Public Benefit	3	Scores carried over from 2021-2025 CIP
Financial	4	Scores carried over from 2021-2025 CIP
Efficiency and Innovation	3	Scores carried over from 2021-2025 CIP



**Project Title:** Rehabilitation of Various Sampling Sites and PS#2 Ferric Chloride System at WRRF

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	5/27/2017
<b>Phase Status:</b>	Active	<b>End Date:</b>	3/11/2022
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	No
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 5	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$255	\$199	\$199	\$55	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	5/27/2017	3/11/2022
Capital Delivery Salary	5/27/2017	3/11/2022
Contractual Professional Services	5/27/2017	3/11/2022
Other Capital Improvement Costs	5/27/2017	3/11/2022
Capitalized Interest	5/27/2017	3/11/2022

**Project Title:** Rehabilitation of Various Sampling Sites and PS#2 Ferric Chloride System at WRRF

**Phase:** Construction Assistance # 1 (CS-301, CS-292, CS-1481, CS-1499)

**Phase Title:** Engineering Services for the Rehab of Various Sampling Stations

<b>Phase Budget:</b> Wastewater	<b>Start Date:</b> 7/1/2016
<b>Phase Status:</b> Active	<b>End Date:</b> 3/11/2022
<b>Cost Allocation:</b> CTA	<b>Fund:</b> N/A - Not Applicable
<b>Funding Source:</b> Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b> Yes
	<b>Tot. Federal Loan Amount:</b> \$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 1	<b>Cost Est. Source:</b> Contract
<b>Cost Est. Date:</b> 9/12/2018	<b>Cost Est. Prepared By:</b> Eng

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Construction Assistance # 1 (CS-301, CS-292, CS-1481, CS-1499)</b>	\$996	\$918	\$918	\$78	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (CS-292)	5/27/2017	3/11/2022
Design/Engineering (CS-301)	7/1/2018	12/27/2021
Design/Engineering (CS-1481)	7/1/2016	6/29/2018
Design/Engineering (CS-1499)	7/1/2016	6/29/2018
Design/Engineering (MISC)	7/1/2017	6/30/2021

**Project Title:** Rehabilitation of Various Sampling Sites and PS#2 Ferric Chloride System at WRRF

**Phase:** Construction (Build) # 1 (1802410)

**Phase Title:** Rehabilitation of Various Sampling Sites and PS#2 Ferric Chloride System at WRRF

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	2/18/2019
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	2/7/2022
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 3	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b> 10/2/2017	<b>Cost Est. Prepared By:</b> Ali Khraizat

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Construction (Build) # 1 (1802410)</b>	\$4,029	\$1,953	\$1,953	\$2,076	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Construction (1802410)	2/18/2019	2/7/2022

**Project Title:** Rehabilitation of Various Sampling Sites and PS#2 Ferric Chloride System at WRRF

**Phase:** Miscellaneous

**Phase Title:** Miscellaneous

**Phase Budget:** Wastewater

**Start Date:** 7/1/2020

**Phase Status:**

**End Date:** 6/30/2021

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** Rehabilitation of Various Sampling Sites and PS#2 Ferric Chloride System at WRRF

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2018	\$5,000	\$2,500	\$2,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,000
2019	\$5,073	\$40	\$551	\$3,957	\$565	\$0	\$0	\$0	\$0	\$0	\$0	\$5,425
2020	\$4,528	\$439	\$609	\$3,921	\$607	\$0	\$0	\$0	\$0	\$0	\$0	\$5,576
2021	\$1,421	\$0	\$815	\$3,493	\$1,300	\$121	\$0	\$0	\$0	\$0	\$0	\$5,729
2022	\$76	\$4	\$316	\$1,318	\$4,932	\$76	\$0	\$0	\$0	\$0	\$0	\$6,645

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$5,280,983	\$3,070,854	\$2,210,127	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Description of CIP Changes:**

Reallocated as-needed contracts from CIP No. 380901 (Sigma-Sampling Sta.) and CIP No. 380901 (Metco-Ferric). Pump station No.2 ferric chloride system re-design is completed and the contractor started the work at site. Re-design of various sampling sites will be completed in few months.

**Project Title:** Assessment and Rehabilitation of WRRF yard piping and underground utilities

**Project Status:** Project Execution - Design

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** WRRF

**Class Lvl 3:** General Purpose

☐ **Project New to CIP**

- ☒ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



Secondary Area

**Project Engineer/Manager:** Chris Wilson

**Director:** Dan Alford

**Managing Dept.:** WW Design Eng

**Date Original Business Case Prepared:**  
 7/27/2016

**Year Project Added to CIP:** 2017

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** WRRF

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

Yard piping and underground utilities are vital to the operations of the WRRF. The integrity of these systems will be maintained with this project. The Secondary Water system needs to be relocated or completely refurbished to provide uninterrupted water for fire protection and process applications such as seal water to the pumps. Some of the yard piping is original to the plant and requires a condition assessment.

**Scope of Work/Project Alternatives:**

This project will include the study, design, and construction for the needed improvements to yard piping and underground utilities. This includes right sizing, as-built confirmation and condition assessment of our yard piping and underground utilities. It is possible that the secondary water system may need to be relocated. The distribution models for the water systems will also be updated. A redundant potable water feed to the WRRF will also be evaluated.

**Other Important Info:**

Reliable utility is a critical aspect of O&M for the facility and to avoid outages.

**Project History:** Some of the pipe lines at the WRRF have been in existence since the plant was built and have been found on record dating back to 1938. As the plant has grown, so have the systems. In general, the majority of the changes to the multiple systems occurred when the specific buildings or components to the plant were built or renovated. Therefore, an evaluation and necessary replacement of these pipelines are needed to make sure the integrity of these pipelines.

**Challenges:** Maintaining the adequate supply of our water systems required for treatment processes during assessment and rehabilitation of underground utilities will be the most significant challenge on this project. Temporary power, air, water, natural gas system shutdowns may also be required to perform the work.

**Primary Driver:** 1 - Condition

**Driver Explanation:**

Some of the underground utilities are original to the plant

**Project Title:** Assessment and Rehabilitation of WRRF yard piping and underground utilities

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and are critical to the plant treatment processes (e.g. incinerator air permit requirements).

**Project Title:** Assessment and Rehabilitation of WRRF yard piping and underground utilities

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### Scoring

**Project Manager Weighted Score:** 79.00

Criteria Name	Score	Comment
Condition	5	Asset equipment remain the same, Condition remains the same
Performance (Service Level/Reliability)	4	Asset equipment remain the same, Performance remains the same
Regulatory (Environmental/Legal)	4	Asset equipment remain the same, Regulatory issues remain the same
Operations and Maintenance	3	Asset equipment remain the same, O&M risks remain the same
Health and Safety	4	Asset equipment remain the same, Public Health risks remain the same
Public Benefit	4	Asset equipment remain the same, Public Benefit risks remain the same
Financial	3	Asset equipment remain the same, Financial risks remain the same
Efficiency and Innovation	3	Asset equipment remain the same, Efficiency and Innovation remain the same

**Risk Committee Weighted Score:** 79.00

Criteria Name	Score	Comment
Condition	5	Scores carried over from previous year
Performance (Service Level/Reliability)	4	Scores carried over from previous year
Regulatory (Environmental/Legal)	4	Scores carried over from previous year
Operations and Maintenance	3	Scores carried over from previous year
Health and Safety	4	Scores carried over from previous year
Public Benefit	4	Scores carried over from previous year
Financial	3	Scores carried over from previous year
Efficiency and Innovation	3	Scores carried over from previous year



**Project Title:** Assessment and Rehabilitation of WRRF yard piping and underground utilities

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	8/17/2020
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	7/8/2025
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	No
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 3	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b> 10/1/2017	<b>Cost Est. Prepared By:</b> Ali Khraizat

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$447	\$176	\$176	\$0	\$90	\$90	\$90	\$0	\$0	\$270	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	10/10/2020	7/8/2025
Capital Delivery Salary	10/10/2020	7/8/2025
Professional Services (CS-272 - 72021A.06 / 72007B.09)	8/17/2020	9/30/2021

**Project Title:** Assessment and Rehabilitation of WRRF yard piping and underground utilities

**Phase:** Design & Construction Management # 1

**Phase Title:** Assessment and Rehabilitation of WRRF yard piping and underground utilities

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	10/10/2020
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	7/8/2025
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 5	<b>Cost Est. Source:</b> Eng
<b>Cost Est. Date:</b> 9/12/2018	<b>Cost Est. Prepared By:</b> Ali Khraizat

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Design &amp; Construction Management # 1</b>	\$1,335	\$491	\$491	\$61	\$782	\$0	\$0	\$0	\$0	\$782	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (1903601)	10/10/2020	7/8/2025

**Project Title:** Assessment and Rehabilitation of WRRF yard piping and underground utilities

**Phase:** Construction (Build) # 1

**Phase Title:** Assessment and Rehabilitation of WRRF yard piping and underground utilities

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	3/20/2022
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	7/8/2025
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b>	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total
<b>Construction (Build) # 1</b>	\$19,325	\$370	\$370	\$145	\$2,090	\$9,341	\$7,377	\$0	\$18,809

**Phase Dates**

Activity Name	Start Date	End Date
Construction	3/20/2022	7/8/2025

**Project Title:** Assessment and Rehabilitation of WRRF yard piping and underground utilities

**Phase:** Miscellaneous

**Phase Title:** Miscellaneous

**Phase Budget:** Wastewater

**Start Date:** 7/1/2020

**Phase Status:**

**End Date:** 6/30/2021

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** Assessment and Rehabilitation of WRRF yard piping and underground utilities

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2018	\$47,579	\$1,700	\$2,000	\$12,000	\$15,600	\$16,279	\$4,141	\$0	\$0	\$0	\$0	\$51,720
2019	\$30,430	\$0	\$0	\$1,718	\$4,008	\$7,174	\$17,530	\$24,026	\$0	\$0	\$0	\$54,456
2020	\$17,430	\$0	\$0	\$323	\$5,258	\$3,849	\$4,500	\$3,500	\$7,423	\$0	\$0	\$24,853
2021	\$23,966	\$0	\$3	\$270	\$4,291	\$4,754	\$4,754	\$4,767	\$5,400	\$273	\$0	\$24,512
2022	\$23,221	\$0	\$3	\$70	\$580	\$558	\$2,858	\$9,808	\$9,782	\$214	\$0	\$23,875

**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$21,108,144	\$1,038,944	\$206,000	\$2,963,200	\$9,432,319	\$7,467,681	\$0	\$0	\$19,863,200	\$0

**Description of CIP Changes:**

This project was separated from of SFE PS rehabilitation and the schedule was advanced by 1 FY.

**Project Title:** DTE Primary Electric 3rd Feed Supply to WRRF

**Project Status:** Pending Closeout

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** WRRF

**Class Lvl 3:** General Purpose

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



**Project Engineer/Manager:** Phillip Kora

**Director:** Philip Kora

**Managing Dept.:** WW Construction Eng

**Date Original Business Case Prepared:**  
7/27/2016

**Year Project Added to CIP:** 2017

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** WRRF

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

The scope of this project includes design and construction of 3rd 120 KV primary electric supply transmission line (design, build and maintain by DTE) tapping into the 120 kv waterman-Zug line in the vicinity of Dearborn St. and Copland St right of way at Tower 1368 per the agreement between DTE and GLWA dated May 2, 2019. GLWA is responsible to secure the property right-of-way from the property owners as well as environmental remediation and cleanup including hauling and disposal of any soil.

**Scope of Work/Project Alternatives:**

GLWA also is responsible to provide the connection from the service point (last steel pole installed by DTE) to GLWA's equipment on GLWA's property. This primary transmission power line will energize the already installed new 120-13.8 industrial substation owned by GLWA near EB-1.

**Other Important Info:**

Challenges: Negotiation with private property owners and testing of the automatic switch over will require co-ordination with operations.  
Keep everything in this section except the last sentence 'In order to speed design and construction GLWA is proposing a design-build project'. Delete that last sentence and replace with 'GLWA and DTE has renegotiated the agreement and executed the new agreement on May 2, 2019'.

**Primary Driver:** 3 - Regulatory

**Driver Explanation:**

GLWA's WWTP requires a reliable and redundant primary electrical power supply in order to be in compliance with its NPDES permit requirements. The disconnection and removal of backup power supply line and substation from PLD leaves GLWA very vulnerable in

**Project Title:** DTE Primary Electric 3rd Feed Supply to WRRF

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**Scoring****Project Manager Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Risk Committee Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Project Title:** DTE Primary Electric 3rd Feed Supply to WRRF

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	7/1/2018
<b>Phase Status:</b>	Active	<b>End Date:</b>	6/30/2022
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	No
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 3	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b> 7/31/2019	<b>Cost Est. Prepared By:</b> PMA

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22
<b>GLWA Salaries</b>	\$586	\$586	\$586	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2018	12/31/2021
Capital Delivery Salary	7/1/2018	12/31/2021
Professional Services	6/3/2019	6/30/2022
Contractual Professional Services	7/1/2018	12/31/2021
Other Capital Improvement Costs	7/1/2018	12/31/2021
Capitalized Interest	7/1/2018	12/31/2021



**Project Title:** DTE Primary Electric 3rd Feed Supply to WRRF

**Phase:** Design & Construction Assistance # 1 (CS-189, CS-1433)

**Phase Title:** DTE Primary Electric 3rd Feed Supply to WRRF

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	7/1/2016
<b>Phase Status:</b>	Active	<b>End Date:</b>	6/30/2021
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 4	<b>Cost Est. Source:</b> Estimate
<b>Cost Est. Date:</b> 7/31/2019	<b>Cost Est. Prepared By:</b> Engineering

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22
<b>Design &amp; Construction Assistance # 1 (CS-189, CS-1433)</b>	\$82	\$82	\$82	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (CS-189)	7/1/2018	6/30/2021
Design/Engineering (CS-1433)	7/1/2016	6/30/2017
Design/Engineering (MISC)	7/1/2017	6/30/2018

**Project Title:** DTE Primary Electric 3rd Feed Supply to WRRF

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**Phase:** Construction (Build) # 1**Phase Title:** DTE Primary Electric 3rd Feed Supply to WRRF

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<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	7/1/2018
<b>Phase Status:</b>	Active	<b>End Date:</b>	6/30/2022
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

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**Phase Comments/Description:**

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<b>Cost Est. Class:</b> Class 3	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b> 7/31/2019	<b>Cost Est. Prepared By:</b> PMA

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22
<b>Construction (Build) # 1</b>	\$3,243	\$3,243	\$3,243	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Construction (Fund 5421)	7/1/2018	6/30/2022
Construction (Fund 5404)	7/1/2018	12/31/2021

**Project Title:** DTE Primary Electric 3rd Feed Supply to WRRF

**Phase:** Miscellaneous

**Phase Title:** Miscellaneous

**Phase Budget:** Wastewater

**Start Date:** 7/1/2020

**Phase Status:**

**End Date:** 6/30/2021

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** DTE Primary Electric 3rd Feed Supply to WRRF

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>5 Year Total</b>	<b>FY18</b>	<b>FY19</b>	<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>Total</b>
2018	\$7,000	\$3,500	\$3,500	\$0	\$0	\$0	\$7,000
2019	\$6,654	\$0	\$2,002	\$1,326	\$3,326	\$0	\$6,669
2020	\$4,755	\$584	\$2,108	\$1,381	\$3,374	\$0	\$7,447
2021	\$2,023	\$0	\$738	\$3,062	\$1,296	\$727	\$5,823
2022	\$393	\$0	\$405	\$2,493	\$1,253	\$393	\$4,544

**Reporting Period 33: Ending FY21 M12 Jun**

<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY22</b>
\$3,912,283	\$3,912,283	\$0

**Description of CIP Changes:**

DTE is expected to start the construction activities in the month of October 2020.

**Project Title:** Rehabilitation of Screened Final Effluent (SFE) Pump Station

**Project Status:** Project Execution - Design

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** WRRF

**Class Lvl 3:** General Purpose

☐ **Project New to CIP**

- ☒ **Innovation**
- ☒ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



SFE Building, Basement

**Project Engineer/Manager:** Chris Wilson

**Director:** Dan Alford

**Managing Dept.:** WW Design Eng

**Date Original Business Case Prepared:**  
 6/21/2017

**Year Project Added to CIP:** 2018

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** WRRF

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

The SFE Pump Station provides SFE water to many of the GLWA WRRF treatment processes and needs to be completely rehabilitated to maintain uninterrupted supply of SFE water to these processes.

**Scope of Work/Project Alternatives:**

This project will include the study, design, and construction for the needed improvements to the SFE pump station. This includes required capacity, pumps, strainers, piping, controls, building improvements, and electrical supply. This will also include a study to evaluate the potential for replacing the secondary water utilization with SFE utilization where feasible and an alternative analysis to the existing carrier water at chlorination/dechlorination facility, seal water, recovery needs which may include additional SFE treatment such as chemical addition to accommodate process needs.

**Other Important Info:**

\*Innovation note: optimize of a valuable resource recovered for facility needs. Project History: The SFE pump station has eight pumps with a total capacity of approximately 135 MGD. Pumps 1,2,4, and 6 were installed in 1973, pumps 3 and 5 in 1980, and pumps 7 and 8 in 1998. The older pumps were rebuilt in 1998. Strainers have been reconditioned as necessary over time. Due to the critical nature of the SFE pump station and the elapsed time since a major rehabilitation (over 15 years), a significant upgrade/rehabilitation is required. In addition, the two 5 kV transformers that supply power from EB-3 are approximately 40 years old and are in need of replacement.

Challenges: Maintaining the adequate supply of SFE to the plant treatment processes during construction of the SFE improvements.

**Primary Driver:** 1 - Condition

**Driver Explanation:**

The SFE pump station is very old and is critical to other treatment processes meeting permit requirements (e.g. incinerator air permit requirements). The Secondary

**Project Title:** Rehabilitation of Screened Final Effluent (SFE) Pump Station

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Water System is very corroded and needs to be rehabilitated or relocated.

**Project Title:** Rehabilitation of Screened Final Effluent (SFE) Pump Station

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**Scoring****Project Manager Weighted Score:** 63.20

Criteria Name	Score	Comment
Condition	5	Asset equipment remain the same, Condition remains the same
Performance (Service Level/Reliability)	2	Asset equipment remain the same, Performance remains the same
Regulatory (Environmental/Legal)	2	Asset equipment remain the same, Regulatory issues remain the same
Operations and Maintenance	4	Asset equipment remain the same, O&M risks remain the same
Health and Safety	1	Asset equipment remain the same, Public Health risks remain the same
Public Benefit	2	Asset equipment remain the same, Public Benefit risks remain the same
Financial	4	Asset equipment remain the same, Financial risks remain the same
Efficiency and Innovation	4	Asset equipment remain the same, Efficiency and Innovation remain the same

**Risk Committee Weighted Score:** 63.20

Criteria Name	Score	Comment
Condition	5	Scores carried over from previous year
Performance (Service Level/Reliability)	2	Scores carried over from previous year
Regulatory (Environmental/Legal)	2	Scores carried over from previous year
Operations and Maintenance	4	Scores carried over from previous year
Health and Safety	1	Scores carried over from previous year
Public Benefit	2	Scores carried over from previous year
Financial	4	Scores carried over from previous year
Efficiency and Innovation	4	Scores carried over from previous year

**Project Title:** Rehabilitation of Screened Final Effluent (SFE) Pump Station

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	5/7/2020
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	2/1/2027
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	No
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 3	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b> 10/1/2018	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total
<b>GLWA Salaries</b>	\$406	\$34	\$34	\$121	\$62	\$62	\$62	\$62	\$0	\$250

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	4/5/2021	2/1/2027
Capital Delivery Salary	4/5/2021	2/1/2027
Professional Services (CS-272 - 72014A.06 / 72021A.07)	5/7/2020	5/6/2022



**Project Title:** Rehabilitation of Screened Final Effluent (SFE) Pump Station

**Phase:** Study # 1 (1802887)

**Phase Title:** Rehabilitation of Screened Final Effluent (SFE) Pump Station

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	4/5/2021
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	2/1/2027
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 4	<b>Cost Est. Source:</b> Eng
<b>Cost Est. Date:</b> 9/12/2018	<b>Cost Est. Prepared By:</b> Ali Khraizat

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total
<b>Study # 1 (1802887)</b>	\$4,104	\$29	\$29	\$1,378	\$673	\$675	\$673	\$675	\$0	\$2,697

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (1802887)	4/5/2021	2/1/2027

**Project Title:** Rehabilitation of Screened Final Effluent (SFE) Pump Station

**Phase:** Construction (Build) # 1

**Phase Title:** Rehabilitation of Screened Final Effluent (SFE) Pump Station

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	8/1/2023
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	7/31/2026
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 5	<b>Cost Est. Source:</b> Eng
<b>Cost Est. Date:</b> 9/12/2018	<b>Cost Est. Prepared By:</b> Ali Khraizat

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total
<b>Construction (Build) # 1</b>	\$35,714	\$198	\$198	\$0	\$1,773	\$10,110	\$10,112	\$13,519	\$0	\$35,516

**Phase Dates**

Activity Name	Start Date	End Date
Construction	8/1/2023	7/31/2026

**Project Title:** Rehabilitation of Screened Final Effluent (SFE) Pump Station

**Phase:** Miscellaneous

**Phase Title:** Miscellaneous

**Phase Budget:** Wastewater

**Start Date:** 7/1/2020

**Phase Status:**

**End Date:** 6/30/2021

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** Rehabilitation of Screened Final Effluent (SFE) Pump Station

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2020	\$24,897	\$51	\$1,091	\$991	\$9,475	\$7,805	\$5,535	\$0	\$0	\$0	\$24,948
2021	\$24,364	\$0	\$590	\$1,362	\$1,507	\$15,571	\$5,924	\$0	\$0	\$0	\$24,954
2022	\$26,923	\$0	\$6	\$500	\$906	\$6,504	\$6,504	\$6,504	\$6,504	\$13,390	\$40,821

**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total
\$40,225,995	\$262,036	\$1,500,000	\$2,509,960	\$10,848,245	\$10,848,246	\$14,257,507	\$0	\$38,463,961

**Description of CIP Changes:**

Updating Project Timing

**Project Title:** WRRF Facility Optimization

**Project Status:** Reclassified

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** WRRF

**Class Lvl 3:** General Purpose

☐ **Project New to CIP**

- ☒ **Innovation**
- ☒ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**


**Project Engineer/Manager:** Chris Wilson

**Director:** Dan Alford

**Managing Dept.:** WW Design Eng

**Date Original Business Case Prepared:**  
 8/7/2019

**Year Project Added to CIP:** 2019

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** WRRF

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

The existing WRRF is a product of countless construction projects over nearly 90 years and consists of numerous process and non-process buildings with varying levels of use and practicality. As WRRF across the nation come out of the shadows and into the light of the public and elected officials it is critical to convey an image that reflects the pride and importance of the work that is done every day at this facility. As such, this project will work on the softer side of the facility, create a visitor center focusing on public education to entice the next generation of wastewater engineers, scientists and operators, and to beautify the image of the facility creating a more welcoming environment for the public and staff alike.

**Scope of Work/Project Alternatives:**

The work consists of extending the evaluation performed as a part of Master Planning to design and construct site modifications including but not limited to a new visitor center, demolition or repurposing of existing structures that are no longer used, consolidation and or reconfiguration of administration, operations and maintenance staff and spaces, vehicle and equipment storage spaces, shops, etc. The project also includes site modifications to include improved site circulation, parking and fencing, green infrastructure, improved landscaping, walking paths around the site and site features, including but not limited to educational signage and benches.

**Other Important Info:**

None

**Primary Driver:** 2 - Performance

**Driver Explanation:**

Improving plant operations by re-organizing work flow paths and space utilization.

**Project Title:** WRRF Facility Optimization

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**Scoring****Project Manager Weighted Score:** 75.10

Criteria Name	Score	Comment
Condition	4	Scores carried over from previous year
Performance (Service Level/Reliability)	3	Scores carried over from previous year
Regulatory (Environmental/Legal)	1	Scores carried over from previous year
Operations and Maintenance	3	Scores carried over from previous year
Health and Safety	4	Scores carried over from previous year
Public Benefit	5	Scores carried over from previous year
Financial	3	Scores carried over from previous year
Efficiency and Innovation	4	Scores carried over from previous year

**Risk Committee Weighted Score:** 75.10

Criteria Name	Score	Comment
Condition	4	Scores carried over from previous year
Performance (Service Level/Reliability)	3	Scores carried over from previous year
Regulatory (Environmental/Legal)	1	Scores carried over from previous year
Operations and Maintenance	3	Scores carried over from previous year
Health and Safety	4	Scores carried over from previous year
Public Benefit	5	Scores carried over from previous year
Financial	3	Scores carried over from previous year
Efficiency and Innovation	4	Scores carried over from previous year

**Project Title:** WRRF Facility Optimization

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	5/7/2020
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	6/30/2026
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	No
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b>	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total
<b>GLWA Salaries</b>	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	6/1/2020	6/30/2026
Capital Delivery Salary	6/1/2020	6/30/2026
Professional Services (CS-272 - 72014A.07)	5/7/2020	5/6/2022
Contractual Professional Services	6/1/2020	6/30/2026
Other Capital Improvement Costs	6/1/2020	6/30/2026
Capitalized Interest	6/1/2020	6/30/2026

**Project Title:** WRRF Facility Optimization

**Phase:** Design & Construction Assistance # 1

**Phase Title:** WRRF Visitor Center and Site Beautification

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	6/1/2020
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	6/30/2026
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b>	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total
<b>Design &amp; Construction Assistance # 1</b>	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	6/1/2020	6/30/2026



**Project Title:** WRRF Facility Optimization

**Phase:** Construction (Build) # 1

**Phase Title:** WRRF Visitor Center and Site Beautification

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	3/2/2023
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	6/30/2026
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b>	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY23	FY24	FY25	FY26	5 Year Total
<b>Construction (Build) # 1</b>	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Construction	3/2/2023	6/30/2026

**Project Title:** WRRF Facility Optimization

**Phase:** Miscellaneous

**Phase Title:** Miscellaneous

**Phase Budget:** Wastewater

**Start Date:** 7/1/2020

**Phase Status:**

**End Date:** 6/30/2021

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	<b>Total Costs</b>	<b>Actual Costs</b>	<b>Prior FYs</b>
<b>Miscellaneous</b>	\$0	\$0	\$0

**Phase Dates**

<b>Activity Name</b>	<b>Start Date</b>	<b>End Date</b>
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** WRRF Facility Optimization

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>5 Year Total</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>Total</b>
2021	\$10,338	\$14	\$657	\$987	\$7,999	\$681	\$0	\$10,338
2022	\$10,241	\$25	\$57	\$1,854	\$5,513	\$972	\$1,846	\$10,271

**Reporting Period 33: Ending FY21 M12 Jun**

<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>5 Year Total</b>
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Description of CIP Changes:**

Updated Scoring.

Project reclassified in FY22 to a program under 260900.

**Project Title:** WRRF Structural Improvements

**Project Status:** Active - Pre-Procurement  
- Design

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** WRRF

**Class Lvl 3:** General Purpose

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



Incineration Building

**Project Engineer/Manager:** Chris Wilson

**Director:** Dan Alford

**Managing Dept.:** WW Design Eng

**Date Original Business Case Prepared:**  
8/24/2020

**Year Project Added to CIP:** 2020

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** WRRF

**Funds and Cost Center:** Wastewater - 5421-  
892211

**Problem Statement:**

The WRRF facilities are some of the oldest facilities within the GLWA infrastructure and are outside the initial design lives. In order to assure the safety of GLWA personnel working at the WRRF and to increase operational reliability, GLWA is initiating a long-term structural maintenance program. The program will start with a full structural needs assessment, inclusive of a four-year program of implementing the highest priority repairs in successive order.

**Scope of Work/Project Alternatives:**

The program will include a complete field assessment and structural condition report, classification of recommended repairs into levels of urgency, estimating quantities and the costs of repairs, developing a three-year repair program to address high priority repairs, design and implementation of repairs, preparation of as-built's and final project report, in connection with the Work. The Work includes improvements to be designed, administered, and constructed by the D/B Contractor, inclusive of civil/site, architectural, and structural, engineering disciplines and construction trades, as may be applicable to complete the work.

**Other Important Info:**

None

**Primary Driver:** 1 - Condition

**Driver Explanation:**

Many older structures around the site are at there end of life and are requiring additional cost to maintain them.

**Project Title:** WRRF Structural Improvements

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**Scoring****Project Manager Weighted Score:** 63.30

Criteria Name	Score	Comment
Condition	4	Asset equipment remain the same, Condition remains the same
Performance (Service Level/Reliability)	4	Asset equipment remain the same, Performance remains the same
Regulatory (Environmental/Legal)	3	Asset equipment remain the same, Regulatory issues remain the same
Operations and Maintenance	4	Asset equipment remain the same, O&M risks remain the same
Health and Safety	1	Asset equipment remain the same, Public Health risks remain the same
Public Benefit	2	Asset equipment remain the same, Public Benefit risks remain the same
Financial	3	Asset equipment remain the same, Financial risks remain the same
Efficiency and Innovation	1	Asset equipment remain the same, Efficiency and Innovation remain the same

**Risk Committee Weighted Score:** 64.40

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	4	
Health and Safety	2	
Public Benefit	2	
Financial	3	
Efficiency and Innovation	1	

**Project Title:** WRRF Structural Improvements

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

<b>Phase Budget:</b>	<b>Start Date:</b> 7/1/2022
<b>Phase Status:</b>	<b>End Date:</b> 7/1/2026
<b>Cost Allocation:</b>	<b>Fund:</b> N/A - Not Applicable
<b>Funding Source:</b> Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b> No
	<b>Tot. Federal Loan Amount:</b> \$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b>	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$333	\$0	\$0	\$0	\$60	\$60	\$60	\$60	\$60	\$302	\$30

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2022	7/1/2026
Capital Delivery Salary	7/1/2022	7/1/2026
Contractual Professional Services	7/1/2022	7/1/2026
Other Capital Improvement Costs	7/1/2022	7/1/2026
Capitalized Interest	7/1/2022	7/1/2026

**Project Title:** WRRF Structural Improvements

**Phase:** TBD / Future Allocation / General Holding

**Phase Title:** TBD / Future Allocation / General Holding

**Phase Budget:**

**Start Date:** 7/1/2022

**Phase Status:**

**End Date:** 7/1/2026

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>TBD / Future Allocation / General Holding</b>	\$11,066	\$0	\$0	\$0	\$339	\$2,426	\$2,427	\$2,427	\$2,427	\$10,048	\$1,018

**Phase Dates**

Activity Name	Start Date	End Date
Design-Build	7/1/2022	7/1/2026

**Project Title:** WRRF Structural Improvements

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>5 Year Total</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>Total</b>
2022	\$10,235	\$52	\$2,052	\$2,046	\$2,046	\$2,046	\$2,046	\$2,046	\$12,333

**Reporting Period 33: Ending FY21 M12 Jun**

<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>5 Year Total</b>	<b>FY28+</b>
\$11,399,998	\$0	\$0	\$400,000	\$2,487,608	\$2,487,608	\$2,487,608	\$2,487,608	\$10,350,432	\$1,049,566

**Description of CIP Changes:**

New Project



**Project Title:** Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

**Project Status:** Project Execution - Design

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Field Services

**Class Lvl 3:** Interceptor

☐ **Project New to CIP**

- ☐ **Innovation**
- ☒ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



Overall Plan for NWI Diversion to Oakwood Facilities

**Project Engineer/Manager:** Biren Saparia

**Director:** Biren Saparia

**Managing Dept.:** SCC

**Date Original Business Case Prepared:** 7/27/2016

**Year Project Added to CIP:** 2014

**CIP Budget:** Wastewater

**Project Jurisdiction:** Multiple Counties

**Lookup Location:** Oakwood District

**Funds and Cost Center:** Wastewater - 5421-882301

**Problem Statement:**

The Oakwood PS and CSO basin are currently under-utilized. In the meantime, surcharging in Northwest Interceptor has increased the CSOs and reduced the ability of customers to discharge into the NWI. The concept to isolate the downstream portion of the NWI from the WRRF and divert flow to the Oakwood PS was evaluated and refined under the Wastewater Master Plan Project. The purpose of this project is to implement the WWMP recommended relief connection from the NWI to the Oakwood PS.

**Scope of Work/Project Alternatives:**

The scope of this project involves Study, Design, and Construction Phase Activities. The study phase will consist of determining the feasibility of advancing the project to the Design and Construction stages. Based on the efforts under the Study, and following receipt of written authorization from GLWA, the Consultants will proceed with the Design and Construction Phase Activities.

**Other Important Info:**

Refer to linked aerial photo of Oakwood District with overlay of proposed new sewers, as built drawings of recent construction in the District for PCS-79, PCS-80 and PC-755; map of Intercommunity Collection System including portion of Oakwood District shown above—and other select resources linked below.

Challenges: Maintaining the wet weather contract capacities and adequate CSO treatment during extreme storm events and mitigate basement and street flooding in the District and intercommunity regional districts are the most significant challenges for the project to address. Other Important Info: The Oakwood District is located in the southwest portion of the City of Detroit covering an area of 1,520 acres. In general, it's bound within by a continuous stretch of the northerly and westerly bank of the Rouge River, thence stretches of the city limits of River Rouge and Ecorse to the south, thence a stretch of the city limits of Lincoln Park to the far lower west (abutting a stretch of Outer Drive near the adjacent watercourse of Ecorse Creek further west), thence a stretch of the city limits of Melvindale to the north near I-75 (between Outer Drive and Schaefer Hwy), thence a continued stretch of city limits of Melvindale to the upper west abutting

**Project Title:** Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

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Schaefer Hwy (between I-75 and the point of beginning along southerly embankment of the Rouge River adjacent Mellon Ave.

Much of the District was originally platted as Oakwood Village, later annexed to the City of Detroit. Some areas of the District are situated in relatively low-lying, flood prone topographies. Much of the combined sewer drainage system was originally designed and built since the 1930's with laterals and larger trunk and intercepting sewers tributary to the former (and present replacement) Oakwood Pumping Station situated near the intersection of Sanders and Liddesdale Street. In early years, combined sanitary and intercepted storm runoff flow drained to that pump station was coarsely screened, pumped (lifted) and, in turn, conveyed through two discharge conduits tributary to a segment of O'Brien Drain --a natural and man-made (modified) stream confluent to the Rouge River--without further treatment.

Whereas much of the remaining area of the District, predominantly that north of Fort Street and east of Schaefer highway (a/k/a Oakwood Heights), is situated on relatively higher terrain. Originally, good portions of this area<sup>4</sup> connected to public sewers drained to other streams or outfalls tributary to the Rouge and otherwise drained to the original municipal wastewater treatment plant in Detroit via other lateral, trunk and intercepting sewers tributary to an original 24" siphon connection constructed beneath the Rouge River just south of the Fort Street bridge to the city's 12'-9" Oakwood Interceptor also constructed in the 1930's extending from the WWTP, largely paralleling the Rouge River to a point ending just north of Fort Street beneath Miller Road.

In the 1940's, a 3'-0" sewer was constructed from the original pump station's discharge channel which proceeded northerly beneath Sanders St and thence easterly beneath Fort St to a drop shaft hydraulic structure at below intersection at Bayside St in turn connected with a 24" siphoned sewer running easterly beneath the Rouge River and connecting with a downstream hydraulic connection to the City's 12'-9" Oakwood Interceptor (later renamed Oakwood Northwest Interceptor, or ONWI) tributary to the WWTP (originally built in the 30's and placed into operation in early 40's) to primarily convey pumped sanitary (dry weather) flow from the southerly portion of the District to the treatment plant. Continued sewer modifications in the District promoted the interception and routing of combined flows in other areas underserved to the pump station via larger intercepting

**Project Title:** Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

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sewers constructed along Pleasant, Sanders and elsewhere connecting with the main Liddesdale Interceptor—the primary influent sewer to pump station. In the

**Primary Driver:** 2 - Performance

**Driver Explanation:**

Preferred alternative wet weather relief sewer modifications to mitigate historical basement and street flooding in impacted districts and otherwise provide increased flow transport and treatment for economic, ecologic and societal benefit of customers in

**Project Title:** Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

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**Scoring****Project Manager Weighted Score:** 74.80

Criteria Name	Score	Comment
Condition	1	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	1	
Health and Safety	4	
Public Benefit	4	
Financial	3	
Efficiency and Innovation	3	

**Risk Committee Weighted Score:** 62.70

Criteria Name	Score	Comment
Condition	1	Scores carried over from previous year
Performance (Service Level/Reliability)	4	Scores carried over from previous year
Regulatory (Environmental/Legal)	2	Scores carried over from previous year
Operations and Maintenance	1	Scores carried over from previous year
Health and Safety	3	Scores carried over from previous year
Public Benefit	4	Scores carried over from previous year
Financial	3	Scores carried over from previous year
Efficiency and Innovation	4	Scores carried over from previous year

**Project Title:** Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	3/15/2021
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	9/30/2027
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	No
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 5	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$394	\$3	\$3	\$55	\$55	\$55	\$55	\$55	\$55	\$278	\$56

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	3/15/2021	9/30/2027
Capital Delivery Salary	3/15/2021	9/30/2027

**Project Title:** Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

**Phase:** Study & Design & Construction Assistance # 1 (2002655)

**Phase Title:** Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	3/15/2021
<b>Phase Status:</b>	Active - Procurement	<b>End Date:</b>	6/30/2026
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

Solicitation is in Bonfire. Contract # 2002655

**Cost Est. Class:** Class 5

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:** Consultant

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Study &amp; Design &amp; Construction Assistance # 1 (2002655)</b>	\$5,782	\$471	\$471	\$1,126	\$1,126	\$1,129	\$274	\$550	\$550	\$3,630	\$553

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (2002655)	3/15/2021	6/30/2026

**Project Title:** Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

**Phase:** Construction (Build) # 1

**Phase Title:** Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	12/1/2024
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	9/30/2027
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 5	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY25	FY26	FY27	5 Year Total	FY28+
<b>Construction (Build) # 1</b>	\$47,289	\$0	\$0	\$10,488	\$13,516	\$12,396	\$36,401	\$10,887

**Phase Dates**

Activity Name	Start Date	End Date
Construction	12/1/2024	9/30/2027

**Project Title:** Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

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**Phase:** Miscellaneous**Phase Title:** Miscellaneous

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**Phase Budget:** Wastewater**Start Date:** 7/1/2020**Phase Status:****End Date:** 6/30/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** Yes**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021



**Project Title:** Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2018	\$11,000	\$550	\$2,750	\$5,500	\$2,200	\$0	\$0	\$0	\$0	\$0	\$11,000
2019	\$17,635	\$0	\$10	\$1,372	\$5,961	\$10,292	\$20,365	\$0	\$0	\$0	\$38,000
2020	\$23,954	\$0	\$0	\$0	\$3,800	\$10,077	\$10,077	\$14,077	\$0	\$0	\$38,031
2021	\$32,147	\$0	\$0	\$975	\$3,128	\$3,371	\$11,234	\$13,439	\$21,365	\$0	\$53,512
2022	\$23,700	\$0	\$0	\$925	\$790	\$786	\$779	\$4,870	\$16,474	\$16,431	\$53,397

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$53,466,141	\$475,416	\$1,181,931	\$1,181,929	\$1,185,168	\$10,818,294	\$14,122,840	\$13,003,076	\$40,311,307	\$11,497,487

**Description of CIP Changes:**

Project Manager is changed to Biren Saparia.

**Project Title:** Detroit River Interceptor (DRI) Evaluation and Rehabilitation

**Project Status:** Project Execution - Construction

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Field Services

**Class Lvl 3:** Interceptor

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



DRI Shaft Construction

**Project Engineer/Manager:** Mini Panicker

**Director:** Todd King

**Managing Dept.:** SCC

**Date Original Business Case Prepared:** 10/11/2016

**Year Project Added to CIP:** 2016

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** Detroit River Interceptor

**Funds and Cost Center:** Wastewater - 5421-882301

**Problem Statement:**

Evaluation of the existing condition of the Detroit River interceptor (DRI), and rehabilitation/replacement of portions based on the evaluation results are essential to optimize the transportation capacity of the GLWA collection system and to increase its service life.

**Scope of Work/Project Alternatives:**

Preliminary Scope of Work of the Project is as follows: Review the existing records, investigate the existing conditions, provide the necessary cleaning/rehabilitation/replacement to optimize the design capacity of the collection system and to minimize the inflow and infiltration into the collection system.

**Other Important Info:**

Challenges: DRI may have flow control challenges for both inspection and rehabilitation. Recommendations from these inspections may reveal further need for cleaning, rehabilitation or replacement.

Project History: The installation of some of the GLWA interceptors and sewers are dated back to 1912 under various contracts.

Detroit River Interceptor inspection was completed in 5 different phases and there were portions deteriorated with visible surface aggregates, attached encrustation and infiltration. Some trunk sewer inspection revealed sludge deposition with reduced transportation capacity.

**Primary Driver:** 1 - Condition

**Driver Explanation:**

Recent inspections revealed portions with encrustation and deterioration.

**Project Title:** Detroit River Interceptor (DRI) Evaluation and Rehabilitation

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**Scoring****Project Manager Weighted Score:** 78.30

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	3	
Health and Safety	3	
Public Benefit	4	
Financial	4	
Efficiency and Innovation	4	

**Risk Committee Weighted Score:** 66.40

Criteria Name	Score	Comment
Condition	5	Scores carried over from previous year
Performance (Service Level/Reliability)	4	Scores carried over from previous year
Regulatory (Environmental/Legal)	3	Scores carried over from previous year
Operations and Maintenance	1	Scores carried over from previous year
Health and Safety	3	Scores carried over from previous year
Public Benefit	4	Scores carried over from previous year
Financial	5	Scores carried over from previous year
Efficiency and Innovation	1	Scores carried over from previous year

**Project Title:** Detroit River Interceptor (DRI) Evaluation and Rehabilitation

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

**Phase Budget:** Wastewater

**Start Date:** 7/3/2017

**Phase Status:**

**End Date:** 6/30/2027

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$430	\$181	\$181	\$35	\$35	\$35	\$35	\$35	\$35	\$177	\$35

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	7/3/2017	6/30/2027
Capital Delivery Salary	7/3/2017	6/30/2027
Contractual Professional Services	7/3/2017	6/30/2027
Other Capital Improvement Costs	7/3/2017	6/30/2027
Capitalized Interest	7/3/2017	6/30/2027

**Project Title:** Detroit River Interceptor (DRI) Evaluation and Rehabilitation

**Phase:** Design-Build # 2 (CON-183, DB-226)

**Phase Title:** Design-Build # 2 (CON-183, DB-226)

**Phase Budget:** Wastewater

**Start Date:** 7/1/2017

**Phase Status:**

**End Date:** 5/24/2023

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Design-Build # 2 (CON-183, DB-226)</b>	\$55,724	\$36,915	\$36,915	\$10,436	\$8,372	\$0	\$0	\$0	\$0	\$8,372	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Construction (DB-226)	7/3/2017	5/24/2023
Construction (CON-183)	7/1/2017	5/29/2020

**Project Title:** Detroit River Interceptor (DRI) Evaluation and Rehabilitation

**Phase:** TBD / Future Allocation / General Holding # 1

**Phase Title:** TBD / Future Allocation / General Holding # 1

**Phase Budget:** Wastewater

**Start Date:** 7/1/2023

**Phase Status:**

**End Date:** 6/30/2027

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>TBD / Future Allocation / General Holding # 1</b>	\$21,028	\$0	\$0	\$1,007	\$3,024	\$3,010	\$3,010	\$3,010	\$13,064	\$7,964

**Phase Dates**

Activity Name	Start Date	End Date
TBD/Unallocated	7/1/2023	6/30/2027

**Project Title:** Detroit River Interceptor (DRI) Evaluation and Rehabilitation

**Phase:** Miscellaneous

**Phase Title:** Miscellaneous

**Phase Budget:** Wastewater

**Start Date:** 7/1/2020

**Phase Status:**

**End Date:** 6/30/2021

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** Detroit River Interceptor (DRI) Evaluation and Rehabilitation

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2018	\$20,000	\$321	\$10,000	\$5,000	\$5,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$20,321
2019	\$39,697	\$5	\$2,232	\$1,084	\$8,052	\$10,187	\$10,187	\$10,187	\$2,491	\$0	\$0	\$0	\$44,425
2020	\$32,000	\$0	\$2,647	\$9,424	\$10,000	\$10,000	\$10,000	\$1,000	\$1,000	\$5,000	\$0	\$0	\$49,071
2021	\$54,885	\$0	\$0	\$10,592	\$16,199	\$23,634	\$9,786	\$1,465	\$10,014	\$9,986	\$0	\$0	\$81,676
2022	\$35,825	\$0	\$7	\$5,353	\$14,791	\$11,192	\$11,192	\$10,057	\$5,696	\$5,235	\$3,645	\$5,608	\$72,775

**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$77,183,709	\$37,097,586	\$10,471,900	\$9,415,401	\$3,060,075	\$3,046,249	\$3,046,249	\$3,046,249	\$21,614,223	\$8,000,000

**Description of CIP Changes:**

Funds increased due to anticipated DB-226 scope increase.



**Project Title:** Fairview Pumping Station - Replace Four Sanitary Pumps

**Project Status:** Project Execution - Construction

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Systems Control Center

**Class Lvl 3:** Pump Stations

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



**Project Engineer/Manager:** Mike Graham

**Director:** Grant Gartrell

**Managing Dept.:** Water Eng

**Date Original Business Case Prepared:**  
3/9/2011

**Year Project Added to CIP:** 2011

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** Fairview Pumping Station

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

Replacement and upgrade of pumping equipment's to improve transportation of waste water to the treatment plant

**Scope of Work/Project Alternatives:**

The scope of work consists of the study, design, and construction for four new pumping systems including inlet and discharge valves and wet well hydraulics. This will also include enlarging doorways, revamping roadways, and upgrading electrical and control systems.

**Other Important Info:**

Schedule delay due to Abnormally and excessively high dry weather flows exceed the planned design capacity of the temporary sewage by-pass pumping station. Delaying the installation of the new pumping units at Fairview Station while waiting for dry weather flows to subside to normal flows poses the risk of not being able to pump dry weather flows in the event that another sewage pump permanently fails at Fairview Station. Increasing the capacity of the temporary by-pass sewage pumping station, which is the scope of this proposed change order, will allow the project to continue to progress uninterrupted and see that the new pumping units are installed. o

**Primary Driver:** 1 - Condition

**Driver Explanation:**

N/A - Active

**Project Title:** Fairview Pumping Station - Replace Four Sanitary Pumps

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**Scoring****Project Manager Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Risk Committee Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Project Title:** Fairview Pumping Station - Replace Four Sanitary Pumps

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

**Phase Budget:** Wastewater

**Start Date:** 5/29/2015

**Phase Status:**

**End Date:** 7/5/2022

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$263	\$248	\$248	\$15	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	4/25/2016	7/5/2022
Capital Delivery Salary	4/25/2016	7/5/2022
Professional Services	5/29/2015	6/30/2022
Capitalized Interest	4/25/2016	7/5/2022

**Project Title:** Fairview Pumping Station - Replace Four Sanitary Pumps

**Phase:** Design & Construction Assistance # 1 (CS-1747, CON-297, CS-1488)

**Phase Title:** Design & Construction Assistance # 1 (CS-1747, CON-297, CS-1488)

**Phase Budget:** Wastewater **Start Date:** 4/25/2016

**Phase Status:** **End Date:** 7/5/2022

**Cost Allocation:** **Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP) **Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Design &amp; Construction Assistance # 1 (CS-1747, CON-297, CS-1488)</b>	\$7,340	\$4,469	\$4,469	\$2,832	\$38	\$0	\$0	\$0	\$0	\$38	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (CS-1747)	4/25/2016	7/5/2022
Design/Engineering (CON-297)	7/1/2017	6/28/2019
Design/Engineering (CS-1488)	7/1/2017	6/29/2018

**Project Title:** Fairview Pumping Station - Replace Four Sanitary Pumps

**Phase:** Construction (Build) # 1 (CON-297)

**Phase Title:** Construction (Build) # 1 (CON-297)

**Phase Budget:** Wastewater

**Start Date:** 1/1/2019

**Phase Status:**

**End Date:** 4/8/2022

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Construction (Build) # 1 (CON-297)</b>	\$32,151	\$25,653	\$25,653	\$6,498	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Construction (CON-297)	1/1/2019	4/8/2022

**Project Title:** Fairview Pumping Station - Replace Four Sanitary Pumps

**Phase:** Miscellaneous

**Phase Title:** Miscellaneous

**Phase Budget:** Wastewater

**Start Date:** 7/1/2020

**Phase Status:**

**End Date:** 6/30/2021

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** Fairview Pumping Station - Replace Four Sanitary Pumps

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2018	\$31,800	\$472	\$2,100	\$14,350	\$15,350	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$32,400
2019	\$30,482	\$778	\$508	\$12,094	\$14,414	\$3,974	\$0	\$0	\$0	\$0	\$0	\$0	\$31,768
2020	\$22,891	\$0	\$1,551	\$6,000	\$18,000	\$4,891	\$0	\$0	\$0	\$0	\$0	\$0	\$30,442
2021	\$6,320	\$0	\$0	\$3,404	\$27,552	\$5,336	\$984	\$0	\$0	\$0	\$0	\$0	\$37,276
2022	\$12,810	\$0	\$772	\$1,852	\$11,648	\$12,990	\$12,781	\$28	\$0	\$0	\$0	\$0	\$40,074

**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$39,756,181	\$30,371,550	\$9,346,339	\$38,292	\$0	\$0	\$0	\$0	\$38,292	\$0

**Description of CIP Changes:**

Change Order No.1 Added

**Project Title:** Freud & Conner Creek Pump Station Improvements

**Project Status:** Project Execution - Design

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Systems Control Center

**Class Lvl 3:** Pump Stations

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



Both PSs pictures

**Project Engineer/Manager:** Mini Panicker

**Director:** Biren Saparia

**Managing Dept.:** SCC

**Date Original Business Case Prepared:** 10/12/2016

**Year Project Added to CIP:** 2016

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** Conner Creek & Freud Pump Stations

**Funds and Cost Center:** Wastewater - 5421-882301

**Problem Statement:**

The primary objective of this project is to study the overall performance of Connor Creek and Freud sewage pumping stations and develop design, and build an operational strategy to optimize the utilization of interconnected piping and operation between both pumping stations and the Connor Creek Retention and Treatment Basin.

**Scope of Work/Project Alternatives:**

Provide basis of design, and final design for an operational strategy to optimize the utilization of interconnected piping and operation between Connor Creek and Freud pumping stations and the Connor Creek Retention and Treatment Basin. Provide construction of the emerging project and construction assistance during construction of the emerging project.

**Other Important Info:**

Challenges: Meeting the collection system transport capacity during the construction.

**Project History:** The Connor Creek Pump Station (CCPS) was originally built in 1928 with four storm water pumps, each with a rated capacity of 500 cubic feet per second (cfs). The CCPS was expanded in 1940 adding four more pumps of the same capacity. The pump station currently has a total capacity of 4,000 cfs and a firm capacity of 3,500 cfs. The pumps are primed using a vacuum system that relies on the flooding of the discharge channel siphon to maintain a water seal, which allows the pumps to be primed. Since the Conner Creek CSO RTB went into operation in November 2005, the discharge channel for the CCPS is drained when the CC RTB is dewatered. Therefore, the vacuum priming system cannot prime the pumps. This results in the CCPS pumps being unable to start until the discharge channel is flooded and the vacuum priming system has a seal on the discharge to prime the pumps.

The Freud Pump Station (FPS) was originally built in 1954 with eight storm water pumps, each with a 450 cfs capacity. Two additional pumps were subsequently installed for dewatering and to act as sanitary pumps



**Project Title:** Freud & Conner Creek Pump Station Improvements

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during dry weather flows. These two pumps are rated at 35 cfs and 20 cfs and are not operated when the storm water pumps are in service. Under the current operating protocol, the FPS is operated first and results in water flowing to the discharge channel of the CCPS, providing sufficient water to ensure submergence of the vacuum siphon block to allow the vacuum system to prime the CCPS pumps.

The FPS pumps do not require priming during normal operations. The discharge pipe from each pump is tied to three 14' x 14' box conduits which transport flow to the CC RTB. The crown elevation of these conduits is approximately 95' and the lowest ground elevation along these conduits ranges from 96' to 100'. Surcharging and flooding have been reported when the CC RTB is filled to the overflow elevation of 98' and more than three of the FPS storm water pumps are in operation

**Primary Driver:** 2 - Performance

**Driver Explanation:**

During peak wet weather there is a potential for the sewers to surcharge and flood the street.

**Project Title:** Freud & Conner Creek Pump Station Improvements

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**Scoring****Project Manager Weighted Score:** 96.90

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	5	
Operations and Maintenance	5	
Health and Safety	4	
Public Benefit	4	
Financial	4	
Efficiency and Innovation	3	

**Risk Committee Weighted Score:** 94.10

Criteria Name	Score	Comment
Condition	4	Scores carried over from previous year
Performance (Service Level/Reliability)	4	Scores carried over from previous year
Regulatory (Environmental/Legal)	5	Scores carried over from previous year
Operations and Maintenance	3	Scores carried over from previous year
Health and Safety	4	Scores carried over from previous year
Public Benefit	5	Scores carried over from previous year
Financial	5	Scores carried over from previous year
Efficiency and Innovation	1	Scores carried over from previous year

**Project Title:** Freud & Conner Creek Pump Station Improvements

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

**Phase Budget:** Wastewater

**Start Date:** 12/3/2015

**Phase Status:** Active

**End Date:** 6/30/2029

**Cost Allocation:** CTA

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**
**Cost Est. Class:** Class 5

**Cost Est. Source:**
**Cost Est. Date:**
**Cost Est. Prepared By:**
**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$1,319	\$924	\$924	\$39	\$39	\$39	\$39	\$39	\$39	\$197	\$157

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	9/30/2016	6/30/2029
Capital Delivery Salary	9/30/2016	6/30/2029
Professional Services	12/3/2015	6/30/2029
Contractual Professional Services	9/30/2016	6/30/2029
Other Capital Improvement Costs	9/30/2016	6/30/2029
Capitalized Interest	9/30/2016	6/30/2029

**Project Title:** Freud & Conner Creek Pump Station Improvements

**Phase:** Design # 1 (CS-120)

**Phase Title:** CS-120, Freud & Conner Creek Pump Station Improvements

**Phase Budget:** Wastewater

**Start Date:** 7/1/2016

**Phase Status:** Active

**End Date:** 6/30/2029

**Cost Allocation:** CTA

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:** Class 4

**Cost Est. Source:** Engineering

**Cost Est. Date:** 8/31/2017

**Cost Est. Prepared By:** Biren Saparia

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Design # 1 (CS-120)</b>	\$34,130	\$4,335	\$4,335	\$2,977	\$2,977	\$2,985	\$2,977	\$2,977	\$2,977	\$14,893	\$11,924

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (CS-120)	9/30/2016	6/30/2029
Design/Engineering (MISC)	7/1/2016	6/30/2017

**Project Title:** Freud & Conner Creek Pump Station Improvements

**Phase:** Construction (Build) # 1 (CON-109)

**Phase Title:** CON-109, Freud & Conner Creek Pump Station Improvements

<b>Phase Budget:</b> Wastewater	<b>Start Date:</b> 7/1/2016
<b>Phase Status:</b> Active	<b>End Date:</b> 7/1/2021
<b>Cost Allocation:</b> CTA	<b>Fund:</b> N/A - Not Applicable
<b>Funding Source:</b> Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b> Yes
<b>Tot. Federal Loan Amount:</b> \$0.00	

**Phase Comments/Description:**

Freud Pump Rehabilitation and procurement of new pump and a switchgear.

<b>Cost Est. Class:</b> Class 4	<b>Cost Est. Source:</b> Engineering
<b>Cost Est. Date:</b> 8/31/2017	<b>Cost Est. Prepared By:</b> Biren Saparia

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Construction (Build) # 1 (CON-109)</b>	\$5,299	\$5,299	\$5,299	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Construction (CON-109)	9/30/2016	7/1/2021
Construction (MISC - Land Purchase)	7/1/2016	6/30/2018

**Project Title:** Freud & Conner Creek Pump Station Improvements

**Phase:** Construction (Phase 2) - Freud Pump Station

**Phase Title:** Construction (Phase 2) - Freud Pump Station

**Phase Budget:** Wastewater

**Start Date:** 7/1/2022

**Phase Status:**

**End Date:** 12/30/2025

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total
<b>Construction (Phase 2) - Freud Pump Station</b>	\$56,791	\$0	\$0	\$763	\$7,736	\$16,793	\$29,636	\$1,860	\$56,028

**Phase Dates**

Activity Name	Start Date	End Date
Construction (Phase 2) - Freud Pump Station	7/1/2022	12/30/2025

**Project Title:** Freud & Conner Creek Pump Station Improvements

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**Phase:** Construction (Phase 3) - Connor Pump Station**Phase Title:** Construction (Phase 3) - Connor Pump Station

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**Phase Budget:** Wastewater**Start Date:** 7/1/2024**Phase Status:****End Date:** 6/29/2029**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** Yes**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY25	FY26	FY27	5 Year Total	FY28+
<b>Construction (Phase 3) - Connor Pump Station</b>	\$165,257	\$0	\$0	\$0	\$27,815	\$27,160	\$54,975	\$110,281

**Phase Dates**

Activity Name	Start Date	End Date
Construction (Phase 3) - Connor Pump Station	7/1/2024	6/29/2029

**Project Title:** Freud & Conner Creek Pump Station Improvements

**Phase:** Miscellaneous

**Phase Title:** Miscellaneous

**Phase Budget:** Wastewater

**Start Date:** 7/1/2020

**Phase Status:**

**End Date:** 6/30/2021

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021



**Project Title:** Freud & Conner Creek Pump Station Improvements

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2018	\$14,460	\$8,040	\$5,900	\$5,100	\$2,460	\$1,000	\$0	\$0	\$0	\$0	\$0	\$0	\$22,500
2019	\$13,997	\$2,101	\$1,384	\$1,192	\$0	\$223	\$1,582	\$11,000	\$15,000	\$0	\$0	\$0	\$32,482
2020	\$155,078	\$0	\$5,110	\$1,984	\$17,029	\$13,014	\$50,014	\$50,014	\$25,007	\$257	\$0	\$0	\$162,429
2021	\$71,033	\$0	\$0	\$5,631	\$7,364	\$6,445	\$57	\$9,898	\$23,830	\$30,803	\$138,071	\$0	\$222,099
2022	\$91,041	\$0	\$2,301	\$134	\$4,908	\$6,445	\$3,357	\$12,646	\$17,446	\$23,446	\$34,146	\$41,846	\$229,279

**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$262,798,022	\$10,559,702	\$3,779,789	\$10,753,378	\$19,818,457	\$32,653,369	\$32,692,472	\$30,176,834	\$126,094,513	\$122,364,017

**Description of CIP Changes:**

50% design estimates for the Freud construction project is higher, so construction funds increased.

**Project Title:** CONDITION ASSESSMENT AT BLUE HILL PUMP STATION

**Project Status:** Future Planned - Within 5 Year Plan

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Systems Control Center

**Class Lvl 3:** Pump Stations

☐ **Project New to CIP**

- ☐ **Innovation**
- ☒ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**


**Project Engineer/Manager:** Todd King

**Director:** Todd King

**Managing Dept.:** Field Services

**Date Original Business Case Prepared:**  
 8/28/2019

**Year Project Added to CIP:** 2019

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** Blue Hill Pump Station- Detroit

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

The condition of the Blue Hill PS has not been accurately established to the metrics being established for other GLWA pumping stations. A new condition assessment is required.

**Scope of Work/Project Alternatives:**

Perform station inspection by a multi-discipline team of specialists in pumps, valves, electrical, HVAC, structural, building envelope I&C, security, and building mechanical systems. Perform wire to water efficiency tests

**Other Important Info:**

Performance of this pumping station is related with flood control objectives for Conner and Freud Pumping Stations.

**Primary Driver:** 1 - Condition

**Driver Explanation:**

Nearing end of useful life

**Project Title:** CONDITION ASSESSMENT AT BLUE HILL PUMP STATION

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**Scoring****Project Manager Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Risk Committee Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Project Title:** CONDITION ASSESSMENT AT BLUE HILL PUMP STATION

**Phase:** GLWA Salaries

**Phase Title:** Salaries

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	11/2/2021
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	4/1/2022
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b>	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22
<b>GLWA Salaries</b>	\$57	\$0	\$0	\$57

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	11/2/2021	4/1/2022
Capital Delivery Salary	11/2/2021	4/1/2022
Contractual Professional Services	11/2/2021	4/1/2022
Other Capital Improvement Costs	11/2/2021	4/1/2022
Capitalized Interest	11/2/2021	4/1/2022

**Project Title:** CONDITION ASSESSMENT AT BLUE HILL PUMP STATION

**Phase:** Study # 1

**Phase Title:** Study

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	11/2/2021
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	4/1/2022
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b>	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22
<b>Study # 1</b>	\$200	\$0	\$0	\$200

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	11/2/2021	4/1/2022

**Project Title:** CONDITION ASSESSMENT AT BLUE HILL PUMP STATION

**Phase:** Miscellaneous

**Phase Title:** Miscellaneous

**Phase Budget:** Wastewater

**Start Date:** 7/1/2020

**Phase Status:**

**End Date:** 6/30/2021

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** CONDITION ASSESSMENT AT BLUE HILL PUMP STATION

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>5 Year Total</b>	<b>FY21</b>	<b>Total</b>
2021	\$286	\$286	\$286
2022	\$0	\$257	\$257

**Reporting Period 33: Ending FY21 M12 Jun**

<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY22</b>
\$257,420	\$0	\$257,420

**Description of CIP Changes:**

**Project Title:** Rouge River In-system Storage Devices

**Project Status:** Future Planned - Within 5 Year Plan

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Systems Control Center

**Class Lvl 3:** In System Devices (Dams, ISD's)

☐ **Project New to CIP**

- ☐ **Innovation**
- ☒ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



**Project Engineer/Manager:** Mini Panicker

**Director:** Biren Saparia

**Managing Dept.:** SCC

**Date Original Business Case Prepared:** 8/1/2019

**Year Project Added to CIP:** 2019

**CIP Budget:** Wastewater

**Project Jurisdiction:** Wayne County - Outside Detroit

**Lookup Location:** Rouge Riiver

**Funds and Cost Center:** Wastewater - 5421-882301

**Problem Statement:**

The Rouge River receives untreated CSO discharges from GLWA CSO outfalls and outfalls from other Member combined sewer systems during wet weather. CSO control strategies that deal with first flush capture from small storms is typically a cost-effective implementation step in a CSO control program. Studies for the Wastewater Master Plan have shown the effectiveness of controlling first flush for small storms with receiving water modeling. 9 locations on DWSD trunk sewers east of the Rouge River are feasible for storing 25 million gallons of CSO during small storms (less than 1-inch of rainfall).

**Scope of Work/Project Alternatives:**

Perform sewer inspections, utility survey, and flow metering to establish and prioritize the siting of 9 new In-System Storage Devices (ISD)

Perform preliminary and final design of the ISDs, including upstream and downstream access points, power supply and instrumentation.

Construct 9 new inflatable dam in-system storage devices (ISD). Modify existing manholes or construct new access points upstream and downstream of each ISD. Provide electrical power, above ground structures for pneumatic control systems and instrumentation for remote operation. Provide connection for mobile standby generator.

**Other Important Info:**

The new ISD devices would be installed in trunk sewers owned and operated by DWSD. These are not GLWA leased sewers. A legal agreement may need to be prepared for GLWA to construct, operate, and maintain.

**Primary Driver:** 3 - Regulatory

**Driver Explanation:**

The NPDES permit requires GLWA to control untreated CSO discharge. This project serves to increase in-system storage for small storms to prevent smaller storms from untreated cso discharging.



**Project Title:** Rouge River In-system Storage Devices

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**Scoring****Project Manager Weighted Score:** 87.50

Criteria Name	Score	Comment
Condition	1	
Performance (Service Level/Reliability)	1	
Regulatory (Environmental/Legal)	5	
Operations and Maintenance	1	
Health and Safety	4	
Public Benefit	4	
Financial	2	
Efficiency and Innovation	5	

**Risk Committee Weighted Score:** 88.20

Criteria Name	Score	Comment
Condition	1	Scores carried over from previous year
Performance (Service Level/Reliability)	3	Scores carried over from previous year
Regulatory (Environmental/Legal)	5	Scores carried over from previous year
Operations and Maintenance	1	Scores carried over from previous year
Health and Safety	4	Scores carried over from previous year
Public Benefit	4	Scores carried over from previous year
Financial	1	Scores carried over from previous year
Efficiency and Innovation	4	Scores carried over from previous year

**Project Title:** Rouge River In-system Storage Devices

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

**Phase Budget:** Wastewater

**Start Date:** 7/1/2023

**Phase Status:** Future Planned Start

**End Date:** 12/27/2030

**Cost Allocation:** TBD

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**
**Cost Est. Class:**
**Cost Est. Source:**
**Cost Est. Date:**
**Cost Est. Prepared By:**
**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$378	\$0	\$0	\$0	\$0	\$1	\$8	\$10	\$10	\$30	\$348

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2023	12/27/2030
Capital Delivery Salary	7/1/2023	12/27/2030
Contractual Professional Services	7/1/2023	12/27/2030
Other Capital Improvement Costs	7/1/2023	12/27/2030
Capitalized Interest	7/1/2023	12/27/2030

**Project Title:** Rouge River In-system Storage Devices

**Phase:** Study & Design & Construction Assistance # 1

**Phase Title:** Study, Design, and Construction Assistance for West-Side In-system Storage Devices

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	7/1/2023
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	12/27/2030
<b>Cost Allocation:</b>	TBD	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

Includes determing proper location of the sites, acquiring the land, developing easements and agreements necessary for construction, operations and mainteannce, and providing design and construction assistance to execute the project. Depending on how land acquisition goes, the design team could start on one side for acquiring, then designing and then bidding out the project to begin construction early. Execution of this project will need to be further evaluated during this period to ensure project meets planned criteria. Property acquisition can continue in parallel to design and construction activities.

<b>Cost Est. Class:</b> Class 4	<b>Cost Est. Source:</b> CDM Smith (WWMP)
<b>Cost Est. Date:</b> 8/1/2019	<b>Cost Est. Prepared By:</b> Carl Johnson

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Study &amp; Design &amp; Construction Assistance # 1</b>	\$8,839	\$0	\$0	\$44	\$190	\$234	\$234	\$704	\$8,134

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	7/1/2023	12/27/2030

**Project Title:** Rouge River In-system Storage Devices

**Phase:** Construction (Build) # 1

**Phase Title:** Construction of in-system storage devices (West-side System)

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	7/1/2026
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	12/27/2030
<b>Cost Allocation:</b>	TBD	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

This phase constructs the designed improvements for the in-system storage devices at the 9 (or more) locations within the west-side sewer system which serve to protect the Rouge River during small precipitation events.

<b>Cost Est. Class:</b> Class 4	<b>Cost Est. Source:</b> CDM Smith (WWMP)
<b>Cost Est. Date:</b> 8/1/2019	<b>Cost Est. Prepared By:</b> Carl Johnson

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Construction (Build) # 1</b>	\$37,099	\$0	\$0	\$186	\$800	\$984	\$984	\$2,956	\$34,143

**Phase Dates**

Activity Name	Start Date	End Date
Construction	7/1/2026	12/27/2030

**Project Title:** Rouge River In-system Storage Devices

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY22	FY23	FY24	FY25	FY26	FY27	Total
2021	\$5,476	\$32	\$86	\$3,374	\$1,984	\$41,321	\$0	\$46,797
2022	\$3,075	\$0	\$0	\$1,026	\$1,024	\$1,024	\$9,477	\$46,317

**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$46,317,487	\$0	\$0	\$0	\$232,592	\$1,000,000	\$1,229,223	\$1,229,223	\$3,691,037	\$42,626,450

**Description of CIP Changes:**

This is a new project to the FY 2021 CIP being driven by recommendations from the Wastewater Masterplan Project (2019).

**Project Title:** Sewer and Interceptor Rehabilitation Program

**Project Status:** Project Execution - Construction

**CIP Type:** Program

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Systems Control Center

**Class Lvl 3:** General Purpose

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**

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**Project Engineer/Manager:** Mini Panicker

**Director:** Todd King

**Managing Dept.:** SCC

**Date Original Business Case Prepared:**  
 10/11/2016

**Year Project Added to CIP:** 2013

**CIP Budget:** Wastewater

**Project Jurisdiction:** Multiple Counties

**Lookup Location:** Sewers and Interceptors

**Funds and Cost Center:** Wastewater - 5421-882301

**Problem Statement:**

Rehabilitation and replacement program of the existing sewers and interceptors is identified after the condition assessment. This replacement, rehabilitation and cleaning program is essential to optimize the transportation capacity of the GLWA collection system and to increase its life expectancy.

**Scope of Work/Project Alternatives:**

Provide CCTV and/or sonar inspection of the GLWA Collection System Interceptors and Trunk Sewers to reveal the existing conditions as per the National Association of Sewer Service Companies' (NASSCO) Pipeline Assessment Certification Program (PACP) standards, evaluate the existing conditions, and provide the necessary cleaning/rehabilitation/replacement to optimize the design capacity of the collection system and to minimize the inflow and infiltration into the collection system.

**Other Important Info:**

Challengers: Large sewers and interceptors may have flow control challenges for both inspection and rehabilitation.

Project History: The installation of some of these interceptors and sewers are dated back to 1912 under various contracts. Detroit River Interceptor inspection was recently completed in 5 different phases and there were portions deteriorated with visible surface aggregates, attached encrustation and infiltration. Some trunk sewer inspection revealed sludge deposition with reduced transportation capacity. Inspections of sewers to reveal the existing conditions are necessary and shall be done every 5 to 7 years. Recommendations from these inspections may reveal further need for cleaning, rehabilitation or replacement.

**Primary Driver:** 1 - Condition

**Driver Explanation:**

Some sewers have sediment deposits that results in transportation capacity limitation. Most of them have deterioration.

**Project Title:** Sewer and Interceptor Rehabilitation Program

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**Scoring****Project Manager Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Risk Committee Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Project Title:** Sewer and Interceptor Rehabilitation Program

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

**Phase Budget:** Wastewater

**Start Date:** 7/1/2022

**Phase Status:** Active

**End Date:** 6/30/2031

**Cost Allocation:** CTA

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:** Class 5

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
<b>GLWA Salaries</b>	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2022	6/30/2031
Capital Delivery Salary	7/1/2022	6/30/2031
Contractual Professional Services	7/1/2022	6/30/2031
Other Capital Improvement Costs	7/1/2022	6/30/2031
Capitalized Interest	7/1/2022	6/30/2031



**Project Title:** Sewer and Interceptor Rehabilitation Program

**Phase:** TBD / Future Allocation / General Holding

**Phase Title:** TBD / Future Allocation / General Holding

<b>Phase Budget:</b>	<b>Start Date:</b> 7/1/2022
<b>Phase Status:</b>	<b>End Date:</b> 6/30/2031
<b>Cost Allocation:</b>	<b>Fund:</b> N/A - Not Applicable
<b>Funding Source:</b> Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b> No
	<b>Tot. Federal Loan Amount:</b> \$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b>	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>TBD / Future Allocation / General Holding</b>	\$65,845	\$0	\$0	\$4,910	\$6,603	\$6,643	\$5,793	\$5,793	\$1,100	\$25,934	\$35,000

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	7/1/2022	6/30/2030
TBD/Unallocated	7/1/2022	6/30/2031
Construction	7/1/2022	6/30/2031

**Project Title:** Sewer and Interceptor Rehabilitation Program

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**Phase:** Miscellaneous**Phase Title:** Miscellaneous

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**Phase Budget:** Wastewater**Start Date:** 7/1/2020**Phase Status:****End Date:** 6/30/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** Sewer and Interceptor Rehabilitation Program

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2018	\$76,000	\$2,612	\$8,000	\$8,000	\$20,000	\$20,000	\$20,000	\$0	\$0	\$0	\$0	\$0	\$78,612
2019	\$55,201	\$3,397	\$7,751	\$10,601	\$10,400	\$11,400	\$11,400	\$11,400	\$11,400	\$0	\$0	\$0	\$77,749
2020	\$75,000	\$0	\$13,555	\$8,609	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$95,000	\$0	\$0	\$192,164
2021	\$103,737	\$0	\$0	\$18,637	\$19,029	\$12,976	\$36,047	\$24,872	\$15,495	\$14,347	\$13,240	\$0	\$154,643
2022	\$37,371	\$0	\$0	\$0	\$0	\$3,138	\$0	\$7,214	\$7,915	\$10,695	\$11,547	\$13,240	\$53,749

**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$65,845,288	\$0	\$4,910,502	\$6,603,863	\$6,643,870	\$5,793,470	\$5,793,472	\$1,100,111	\$25,934,786	\$35,000,000

**Description of CIP Changes:**

NA

**Project Title:** CON-149, Emergency Sewer Repair

**Project Status:** Project Execution - Construction

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Systems Control Center

**Class Lvl 3:** General Purpose

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**


**Project Engineer/Manager:** Mini Panicker

**Director:** Todd King

**Managing Dept.:** SCC

**Date Original Business Case Prepared:**  
10/11/2016

**Year Project Added to CIP:** 2013

**CIP Budget:** Wastewater

**Project Jurisdiction:** Multiple Counties

**Lookup Location:** Sewers and Interceptors

**Funds and Cost Center:** Wastewater - 5421-882301

**Problem Statement:**

Rehabilitation and replacement program of the existing sewers and interceptors is identified after the condition assessment. This replacement, rehabilitation and cleaning program is essential to optimize the transportation capacity of the GLWA collection system and to increase its life expectancy.

**Scope of Work/Project Alternatives:**

Provide CCTV and/or sonar inspection of the GLWA Collection System Interceptors and Trunk Sewers to reveal the existing conditions as per the National Association of Sewer Service Companies' (NASSCO) Pipeline Assessment Certification Program (PACP) standards, evaluate the existing conditions, and provide the necessary cleaning/rehabilitation/replace to optimize the design capacity of the collection system and to minimize the inflow and infiltration into the collection system.

**Other Important Info:**

Challengers: Large sewers and interceptors may have flow control challenges for both inspection and rehabilitation.

Project History: The installation of some of these interceptors and sewers are dated back to 1912 under various contracts. Detroit River Interceptor inspection was recently completed in 5 different phases and there were portions deteriorated with visible surface aggregates, attached encrustation and infiltration. Some trunk sewer inspection revealed sludge deposition with reduced transportation capacity. Inspections of sewers to reveal the existing conditions are necessary and shall be done every 5 to 7 years. Recommendations from these inspections may reveal further need for cleaning, rehabilitation or replacement.

**Primary Driver:** 1 - Condition

**Driver Explanation:**

Some sewers have sediment deposits that results in transportation capacity limitation. Some have deterioration.

**Project Title:** CON-149, Emergency Sewer Repair

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**Scoring****Project Manager Weighted Score:** 76.90

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	4	
Health and Safety	4	
Public Benefit	3	
Financial	3	
Efficiency and Innovation	2	

**Risk Committee Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Project Title:** CON-149, Emergency Sewer Repair

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

**Phase Budget:** Wastewater

**Start Date:** 7/14/2017

**Phase Status:** Active

**End Date:** 12/30/2022

**Cost Allocation:** CTA

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:** Class 5

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$347	\$318	\$318	\$21	\$7	\$0	\$0	\$0	\$0	\$7	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary (882301.000)	7/14/2017	12/30/2022
Capital Delivery Salary (892211.000)	7/14/2017	12/30/2022
Capital Delivery Salary (882301.000)	7/14/2017	12/30/2022
Capital Delivery Salary (892211.000)	7/14/2017	12/30/2022
Professional Services (CS-272 - 71003A.01)	8/20/2019	9/2/2020
Contractual Professional Services	7/14/2017	12/30/2022
Other Capital Improvement Costs	7/14/2017	12/30/2022
Capitalized Interest	7/14/2017	12/30/2022

**Project Title:** CON-149, Emergency Sewer Repair

**Phase:** Design-Build # 1 (CON-149)

**Phase Title:** CON-149, Emergency Sewer Repair

<b>Phase Budget:</b> Wastewater	<b>Start Date:</b> 7/14/2017
<b>Phase Status:</b> Active	<b>End Date:</b> 12/30/2022
<b>Cost Allocation:</b> CTA	<b>Fund:</b> N/A - Not Applicable
<b>Funding Source:</b> Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b> Yes
	<b>Tot. Federal Loan Amount:</b> \$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 1	<b>Cost Est. Source:</b> Contractor
<b>Cost Est. Date:</b> 8/31/2017	<b>Cost Est. Prepared By:</b> Biren Saparia

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Design-Build # 1 (CON-149)</b>	\$37,904	\$28,786	\$28,786	\$6,074	\$3,043	\$0	\$0	\$0	\$0	\$3,043	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (CS-168)	7/14/2017	10/30/2022
Construction (CON-149)	7/14/2017	12/30/2022

**Project Title:** CON-149, Emergency Sewer Repair

**Phase:** Miscellaneous

**Phase Title:** Miscellaneous

**Phase Budget:** Wastewater

**Start Date:** 7/1/2020

**Phase Status:**

**End Date:** 6/30/2021

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021



**Project Title:** CON-149, Emergency Sewer Repair

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>5 Year Total</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>Total</b>
2022	\$1,479	\$11,301	\$1,479	\$0	\$0	\$0	\$0	\$0	\$32,282

**Reporting Period 33: Ending FY21 M12 Jun**

<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>5 Year Total</b>	<b>FY28+</b>
\$38,252,078	\$29,105,295	\$6,096,016	\$3,050,766	\$0	\$0	\$0	\$0	\$3,050,766	\$0

**Description of CIP Changes:**

Funds changed for CS-168, CON-149. CON-149 has CO-002 for time extension only and CO-003 for time extension and additional funds. CO-003 is to assess and address the flood related damages

**Project Title:** Conveyance System Engineering Services-1802575

**Project Status:** Project Execution - Design

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Systems Control Center

**Class Lvl 3:** General Purpose

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



Woodward Sewer System

**Project Engineer/Manager:** Mini Panicker

**Director:** Biren Saparia

**Managing Dept.:** SCC

**Date Original Business Case Prepared:** 10/11/2016

**Year Project Added to CIP:** 2013

**CIP Budget:** Wastewater

**Project Jurisdiction:** Multiple Counties

**Lookup Location:** Sewers and Interceptors

**Funds and Cost Center:** Wastewater - 5421-882301

**Problem Statement:**

Rehabilitation and replacement program of the existing sewers and interceptors is identified after the condition assessment. This replacement, rehabilitation and cleaning program is essential to optimize the transportation capacity of the GLWA collection system and to increase its life expectancy.

**Scope of Work/Project Alternatives:**

Provide CCTV and/or sonar inspection of the GLWA Collection System Interceptors and Trunk Sewers to reveal the existing conditions as per the National Association of Sewer Service Companies' (NASSCO) Pipeline Assessment Certification Program (PACP) standards, evaluate the existing conditions, and provide the necessary cleaning/rehabilitation/replace to optimize the design capacity of the collection system and to minimize the inflow and infiltration into the collection system.

**Other Important Info:**

Challengers: Large sewers and interceptors may have flow control challenges for both inspection and rehabilitation.

Project History: The installation of some of these interceptors and sewers are dated back to 1912 under various contracts. Detroit River Interceptor inspection was recently completed in 5 different phases and there were portions deteriorated with visible surface aggregates, attached encrustation and infiltration. Some trunk sewer inspection revealed sludge deposition with reduced transportation capacity. Inspections of sewers to reveal the existing conditions are necessary and shall be done every 5 to 7 years. Recommendations from these inspections may reveal further need for cleaning, rehabilitation or replacement.

**Primary Driver:** 1 - Condition

**Driver Explanation:**

Some sewers have sediment deposits that results in transportation capacity limitation. Some have deterioration.

**Project Title:** Conveyance System Engineering Services-1802575

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**Scoring****Project Manager Weighted Score:** 76.70

Criteria Name	Score	Comment
Condition	4	Connor Creek Sewer was constructed between 1924 and 1926. There are Grades 3,4, and 5 Structural and O&M defects
Performance (Service Level/Reliability)	4	Heavy debris accumulation in some segments reduces the transportation capacity
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	3	
Health and Safety	3	
Public Benefit	4	
Financial	3	
Efficiency and Innovation	2	

**Risk Committee Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Project Title:** Conveyance System Engineering Services-1802575

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

**Phase Budget:** Wastewater

**Start Date:** 8/8/2019

**Phase Status:** Active

**End Date:** 6/30/2025

**Cost Allocation:** CTA

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**
**Cost Est. Class:** Class 5

**Cost Est. Source:**
**Cost Est. Date:**
**Cost Est. Prepared By:**
**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$227	\$17	\$17	\$52	\$52	\$52	\$52	\$0	\$0	\$157	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	8/8/2019	6/30/2025
Capital Delivery Salary	8/8/2019	6/30/2025
Contractual Professional Services	8/8/2019	6/30/2025
Other Capital Improvement Costs	8/8/2019	6/30/2025
Capitalized Interest	8/8/2019	6/30/2025

**Project Title:** Conveyance System Engineering Services-1802575

**Phase:** Study & Design & Construction Assistance # 1 (1802575)

**Phase Title:** Conveyance System Engineering Services

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	8/8/2019
<b>Phase Status:</b>	Under Procurement	<b>End Date:</b>	6/30/2025
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

Brown and Caldwell

<b>Cost Est. Class:</b>	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	5 Year Total
<b>Study &amp; Design &amp; Construction Assistance # 1 (1802575)</b>	\$5,957	\$925	\$925	\$1,223	\$1,266	\$1,270	\$1,270	\$3,807

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (1802575)	8/8/2019	6/30/2025

**Project Title:** Conveyance System Engineering Services-1802575

**Phase:** Construction (Build) # 1

**Phase Title:** Construction from 1802575

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	12/1/2022
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	6/30/2025
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

Sewer rehabilitation projects arising from 1802575

**Cost Est. Class:** Class 5

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	5 Year Total
<b>Construction (Build) # 1</b>	\$43,868	\$0	\$0	\$0	\$9,849	\$17,034	\$16,984	\$43,868

**Phase Dates**

Activity Name	Start Date	End Date
Construction	12/1/2022	6/30/2025

**Project Title:** Conveyance System Engineering Services-1802575

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**Phase:** Miscellaneous**Phase Title:** Miscellaneous

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**Phase Budget:** Wastewater**Start Date:** 7/1/2020**Phase Status:****End Date:** 6/30/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** Yes**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** Conveyance System Engineering Services-1802575

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2022	\$39,589	\$11,656	\$11,646	\$9,476	\$9,250	\$9,216	\$0	\$0	\$52,157

**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$50,053,434	\$943,846	\$1,276,294	\$11,168,334	\$18,357,559	\$18,307,402	\$0	\$0	\$47,833,294	\$0

**Description of CIP Changes:**

Schedule Extension Conveyance System Engineering Services-1802575. The construction for Conner Creek Sewer System will be under this CIP. 7/23/21 AC



**Project Title:** NWI Rehabilitation

**Project Status:** Active - Procurement - Construction

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Systems Control Center

**Class Lvl 3:** General Purpose

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**


**Project Engineer/Manager:** Mini Panicker

**Director:** Biren Saparia

**Managing Dept.:** SCC

**Date Original Business Case Prepared:**  
 12/1/2019

**Year Project Added to CIP:** 2021

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** Sewers and Interceptors

**Funds and Cost Center:** Wastewater - 5421-892111

**Problem Statement:**

The North West Interceptor (NWI) was constructed between 1928 and 1950 and is unique among the GLWA interceptors in that the NWI periodically reduces in size at certain locations to restrict downstream conveyance to the Water Resource Recovery Facility (WRRF). A task was initiated under the contract CS-168 to perform the condition assessment and design for the rehabilitation of NWI from Eight Mile to Tireman.

**Scope of Work/Project Alternatives:**

Scope of work is the rehabilitation of NWI from Eight Mile to Tireman mainly debris removal, deep concrete repairs, brick repairs, tuck pointing etc. to reduce infiltration and to increase the conveyance capacity.

**Other Important Info:**

Two flow control structures were constructed under CON-149 contract to facilitate condition assessment and rehabilitation for portions of the NWI south of McNichols

**Primary Driver:** 1 - Condition

**Driver Explanation:**

NWI was constructed between 1928 and 1950 and its size varies significantly from segment to segment.

**Project Title:** NWI Rehabilitation

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**Scoring****Project Manager Weighted Score:** 67.10

Criteria Name	Score	Comment
Condition	4	North West Interceptor was constructed between 1928 and 1930 and its size varies from 4' to 11'. There are Grades 3,4, and 5 Structural and O&M defects
Performance (Service Level/Reliability)	4	Heavy debris accumulation in many segments reduces the transportation capacity. Lots of mineral deposits also in NWI
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	4	
Health and Safety	3	
Public Benefit	3	
Financial	4	
Efficiency and Innovation	2	

**Risk Committee Weighted Score:** 60.30

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	4	
Health and Safety	3	
Public Benefit	4	
Financial	2	
Efficiency and Innovation	1	

**Project Title:** NWI Rehabilitation

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**Phase:** GLWA Salaries**Phase Title:** GLWA Salaries

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**Phase Budget:****Start Date:** 6/1/2019**Phase Status:****End Date:** 6/28/2024**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	5 Year Total
<b>GLWA Salaries</b>	\$114	\$0	\$0	\$10	\$52	\$52	\$0	\$104

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	6/1/2019	6/28/2024
Capital Delivery Salary	6/1/2019	6/28/2024

**Project Title:** NWI Rehabilitation

**Phase:** TBD / Future Allocation / General Holding

**Phase Title:** TBD / Future Allocation / General Holding

**Phase Budget:**
**Start Date:** 6/1/2019

**Phase Status:**
**End Date:** 6/28/2024

**Cost Allocation:**
**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**
**Cost Est. Class:**
**Cost Est. Source:**
**Cost Est. Date:**
**Cost Est. Prepared By:**
**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	5 Year Total
<b>TBD / Future Allocation / General Holding</b>	\$10,264	\$267	\$267	\$27	\$4,991	\$4,977	\$0	\$9,969

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (CS-168)	6/1/2019	6/30/2021
Construction	7/1/2022	6/28/2024

**Project Title:** NWI Rehabilitation

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>5 Year Total</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>Total</b>
2022	\$9,092	\$1,767	\$5,046	\$4,046	\$10,938

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<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>5 Year Total</b>
\$10,378,828	\$267,139	\$37,264	\$5,044,122	\$5,030,303	\$0	\$10,074,425

**Description of CIP Changes:**

Schedule is changed to extend the construction into FY24

**Project Title:** Conveyance System Repairs ( Sewers)

**Project Status:** Project Execution - Design

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Systems Control Center

**Class Lvl 3:** General Purpose

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



**Project Engineer/Manager:** Mini Panicker

**Director:** Biren Saparia

**Managing Dept.:** SCC

**Date Original Business Case Prepared:**  
7/24/2020

**Year Project Added to CIP:** 2020

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** Sewers and Interceptors

**Funds and Cost Center:** Wastewater - 5421-882301

**Problem Statement:**

Rehabilitation program of the existing sewers and interceptors is identified after the condition assessment. This rehabilitation and cleaning program is essential to optimize the transportation capacity of the GLWA collection system and to increase its life expectancy.

**Scope of Work/Project Alternatives:**

Evaluate the existing conditions of Brush, Joy Road, & Seven Mile Sewers. Provide the necessary cleaning/rehabilitation/replacement to optimize the design capacity of the collection system and to minimize the inflow and infiltration into the collection system.

**Other Important Info:**

This Engineering Services contract also includes the remaining CSO outfalls which is being funded by the Outfall Program, 260500

**Primary Driver:** 1 - Condition

**Driver Explanation:**

There are PACP grades 4 and 5 Structural and O&M deficiencies in these sewers. Renewing them will increase the capacity of the system as well as reduce I/I into the sewer system

**Project Title:** Conveyance System Repairs ( Sewers)**Scoring****Project Manager Weighted Score:** 63.20

Criteria Name	Score	Comment
Condition	4	Seven Mile, Joy Rd and Bates sewers have many Grade 3,4 and 5 O&M defects. These are part of the top 20 rehabilitation priority list
Performance (Service Level/Reliability)	4	Heavy debris accumulation in some segments reduces the transportation capacity
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	3	
Health and Safety	2	
Public Benefit	2	
Financial	2	
Efficiency and Innovation	1	

**Risk Committee Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Project Title:** Conveyance System Repairs ( Sewers)

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

**Phase Budget:**
**Start Date:** 1/1/2021

**Phase Status:**
**End Date:** 6/30/2028

**Cost Allocation:**
**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**
**Cost Est. Class:**
**Cost Est. Source:**
**Cost Est. Date:**
**Cost Est. Prepared By:**
**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$319	\$2	\$2	\$39	\$39	\$39	\$39	\$39	\$39	\$198	\$79

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	1/1/2021	6/30/2028
Capital Delivery Salary	1/1/2021	6/30/2028
Contractual Professional Services	1/1/2021	6/30/2028
Other Capital Improvement Costs	1/1/2021	6/30/2028
Capitalized Interest	1/1/2021	6/30/2028



**Project Title:** Conveyance System Repairs ( Sewers)

**Phase:** Design & Construction

**Phase Title:** Design & Construction

**Phase Budget:**
**Start Date:** 1/1/2021

**Phase Status:**
**End Date:** 6/30/2028

**Cost Allocation:**
**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**
**Cost Est. Class:**
**Cost Est. Source:**
**Cost Est. Date:**
**Cost Est. Prepared By:**
**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Design &amp; Construction</b>	\$34,950	\$20	\$20	\$5,109	\$2,109	\$2,960	\$5,123	\$5,109	\$5,109	\$20,412	\$9,408

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	1/1/2021	6/30/2027
Design/Engineering (WW Field Services)	1/1/2021	6/30/2027
Construction	7/1/2021	6/30/2028

**Project Title:** Conveyance System Repairs ( Sewers)

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>5 Year Total</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>Total</b>
2022	\$36,230	\$523	\$7,046	\$7,046	\$7,046	\$7,046	\$8,046	\$6,046	\$47,821

**Reporting Period 33: Ending FY21 M12 Jun**

<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>5 Year Total</b>	<b>FY28+</b>
\$35,270,410	\$22,180	\$5,149,139	\$2,149,139	\$3,000,000	\$5,163,245	\$5,149,139	\$5,149,137	\$20,610,660	\$9,488,431

**Description of CIP Changes:**

NA

**Project Title:** Rehabilitation of Woodward Sewer Systems

**Project Status:** Active - Procurement - Board Approved - Construction

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Field Services

**Class Lvl 3:** General Purpose

☒ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**


**Project Engineer/Manager:** Mini Panicker

**Director:** Biren Saparia

**Managing Dept.:** SCC

**Date Original Business Case Prepared:** 7/8/2020

**Year Project Added to CIP:** 2021

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** Sewers and Interceptors

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

During the initial condition assessment, Woodward Sewer was ranked high in the rehabilitation list since there were several grade 3, 4 and 5 defects, root intrusions, as well as several instances of missing bricks and infiltration throughout the pipe segments. This rehabilitation is essential to optimize the transportation capacity of the Woodward Sewer and the GLWA collection system and to increase its life expectancy

**Scope of Work/Project Alternatives:**

scope of work to be performed on this project includes rehabilitation of existing sewers generally along Woodward Avenue in Detroit, MI from McNichols Road at the north end to the location of the B-21 regulator south of Jefferson Avenue. In addition, two segments that connect to the sewer on Woodward Avenue will be rehabilitated:

1. Woodward Extension-just north of the Detroit-Highland Park city border on Highland Street west from Woodward Avenue to a parallel sewer line running south on Third Avenue, south to Tuxedo and along Tuxedo back to Woodward Avenue.
  2. Sewer—extending east of Woodward Avenue in the alley between Chandler and Smith Streets, then along Clay Street to the east to Hamtramck Drive and north to Denton Avenue at Lumpkin Street.
- Mainly slip lining, heavy cleaning, spot repairs, and manhole rehabilitation are involved

**Other Important Info:**

NA

**Primary Driver:** 1 - Condition

**Driver Explanation:**

The rehabilitation of this sewer was prioritized due to its condition and age. When Woodward sewer was originally inspected in 2017 there were several grade 3, 4 and 5 defects, root intrusions, as well as several instances of missing bricks and infiltration throughout the pipe segments.

**Project Title:** Rehabilitation of Woodward Sewer Systems

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**Scoring****Project Manager Weighted Score:** 75.60

Criteria Name	Score	Comment
Condition	4	Most of the Woodward Sewer was constructed in the 1890s and has Structural and O&M defects 3,4, and 5s
Performance (Service Level/Reliability)	4	Heavy debris accumulation and root growth in some segments reduces the transportation capacity
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	3	
Health and Safety	3	
Public Benefit	3	
Financial	2	
Efficiency and Innovation	2	

**Risk Committee Weighted Score:** 76.80

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	3	
Health and Safety	3	
Public Benefit	3	
Financial	4	
Efficiency and Innovation	2	

**Project Title:** Rehabilitation of Woodward Sewer Systems

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

**Phase Budget:** Wastewater

**Start Date:** 8/24/2019

**Phase Status:**

**End Date:** 6/30/2025

**Cost Allocation:**

**Fund:**

**Funding Source:**

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	<b>Total Costs</b>	<b>Actual Costs</b>	<b>Prior FYs</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>5 Year Total</b>
<b>GLWA Salaries</b>	\$10	\$4	\$4	\$1	\$1	\$1	\$1	\$4

**Phase Dates**

<b>Activity Name</b>	<b>Start Date</b>	<b>End Date</b>
Capital Delivery Salary	8/24/2019	6/30/2025
Capital Delivery Salary	8/24/2019	6/30/2025
Capital Delivery Salary	8/24/2019	6/30/2025
Capital Delivery Salary	8/24/2019	6/30/2025

**Project Title:** Rehabilitation of Woodward Sewer Systems

**Phase:** Design/Engineering (1802575)

**Phase Title:** Rehabilitation of Woodward Sewer System

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	7/1/2021
<b>Phase Status:</b>	Project Execution	<b>End Date:</b>	7/31/2021
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

Design

<b>Cost Est. Class:</b> Class 1	<b>Cost Est. Source:</b> Brown and Caldwell
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22
<b>Design/Engineering (1802575)</b>	\$1,224	\$1,224	\$1,224	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (1802575)	7/1/2021	7/31/2021

**Project Title:** Rehabilitation of Woodward Sewer Systems

**Phase:** Design/Engineering

**Phase Title:** Design/Engineering

**Phase Budget:** Wastewater

**Start Date:** 8/24/2019

**Phase Status:**

**End Date:** 6/30/2025

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
<b>Design/Engineering</b>	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	8/24/2019	6/30/2025

**Project Title:** Rehabilitation of Woodward Sewer Systems

**Phase:** Construction

**Phase Title:** Construction

**Phase Budget:** Wastewater

**Start Date:** 8/1/2021

**Phase Status:**

**End Date:** 6/30/2025

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	5 Year Total
Construction	\$17,924	\$0	\$0	\$3,369	\$4,847	\$4,860	\$4,847	\$14,554

**Phase Dates**

Activity Name	Start Date	End Date
Construction	8/1/2021	6/30/2025



**Project Title:** Rehabilitation of Woodward Sewer Systems

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>
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**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	5 Year Total
\$19,160,077	\$1,229,440	\$3,371,450	\$4,848,636	\$4,861,919	\$4,848,632	\$14,559,187

**Description of CIP Changes:**

First Construction Contract released from CIP 260204 Design. 7/23/21 AC

**Project Title:** Rehabilitation of Conner Creek Sewer Systems

**Project Status:** Reclassified

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Field Services

**Class Lvl 3:** General Purpose

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**


**Project Engineer/Manager:** Mini Panicker

**Director:** Biren Saparia

**Managing Dept.:** SCC

**Date Original Business Case Prepared:**
**Year Project Added to CIP:** 2020

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:**
**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

Condition assessment of Connor Creek Sewer revealed infiltration drippers, runners, and gushers throughout the system. Inspections also revealed longitudinal cracking in the circular sewer, significant reinforcement visible in the Double Barrel sewer and grit/debris in several sections of the CCSS. To optimize the collection system capacity and to increase its life expectancy rehabilitation of Connor Creek Sewer is essential.

**Scope of Work/Project Alternatives:**

: Scope of work to be performed for the rehabilitation of the Connor Creek Sewer mainly includes heavy cleaning, slip lining, spot repairs, and manhole rehabilitation.

**Other Important Info:**
**Primary Driver:** 1 - Condition

**Driver Explanation:**

The rehabilitation of this sewer was prioritized due to its condition. When it was originally inspected there were several defects, root intrusions, longitudinal cracks as well as infiltration throughout the pipe segments.

**Project Title:** Rehabilitation of Conner Creek Sewer Systems

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**Scoring****Project Manager Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Risk Committee Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Project Title:** Rehabilitation of Conner Creek Sewer Systems

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**Project Title:** Rehabilitation of Conner Creek Sewer Systems

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>
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**Reporting Period 33: Ending FY21 M12 Jun**

<b>Total Costs</b>
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**Description of CIP Changes:**

Moved this project under the design contract CIP 260204. 7/23/21 AC.

**Project Title:** Sewer Rehabilitation and Repair

**Project Status:** Active - Procurement - Construction

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Systems Control Center

**Class Lvl 3:** General Purpose

☒ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**


**Project Engineer/Manager:** Mini Panicker

**Director:** Biren Saparia

**Managing Dept.:** SCC

**Date Original Business Case Prepared:**  
 5/30/2021

**Year Project Added to CIP:** 2021

**CIP Budget:** Wastewater

**Project Jurisdiction:** Multiple Counties

**Lookup Location:** Sewers and Interceptors

**Funds and Cost Center:** Wastewater - 5421-882301

**Problem Statement:**

GLWA collection system has a network of aging and deteriorated sewers. Due to the age and deterioration, immediate sewer repair/rehabilitation services are often necessary to avoid basement flooding and maintain the flows within the wastewater conveyance system. This contract is to continue the as needed sewer repairs, inspection, and rehabilitations to help GLWA optimize the collection system capacity.

**Scope of Work/Project Alternatives:**

Scope of work to be performed under this contract includes as needed repair, inspection, heavy cleaning, and rehabilitation to bring back the sewer system to its normal capacity and function and to avoid collapse.

**Other Important Info:**

This is a replacement contract for the current CON-149.

**Primary Driver:** 1 - Condition

**Driver Explanation:**

Condition assessment of the collection system has revealed many structural and O&M related defects throughout the GLWA sewer collection system.

**Project Title:** Sewer Rehabilitation and Repair

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**Scoring****Project Manager Weighted Score:** 76.90

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	4	
Health and Safety	4	
Public Benefit	3	
Financial	3	
Efficiency and Innovation	2	

**Risk Committee Weighted Score:** 61.30

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	3	
Health and Safety	3	
Public Benefit	4	
Financial	4	
Efficiency and Innovation	2	

**Project Title:** Sewer Rehabilitation and Repair

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**Phase:** GLWA Salaries**Phase Title:** GLWA Salaries

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**Phase Budget:** Wastewater**Start Date:** 7/1/2022**Phase Status:****End Date:** 12/30/2024**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
<b>GLWA Salaries</b>	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2022	12/30/2024
Capital Delivery Salary	7/1/2022	12/30/2024



**Project Title:** Sewer Rehabilitation and Repair

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**Phase:** Design/Engineering**Phase Title:** Design/Engineering

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**Phase Budget:** Wastewater**Start Date:** 7/1/2022**Phase Status:****End Date:** 7/31/2024**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Design/Engineering	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	7/1/2022	7/31/2024

**Project Title:** Sewer Rehabilitation and Repair

**Phase:** Construction

**Phase Title:** Construction

**Phase Budget:** Wastewater

**Start Date:** 7/1/2022

**Phase Status:**
**End Date:** 12/30/2024

**Cost Allocation:**
**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**
**Cost Est. Class:**
**Cost Est. Source:**
**Cost Est. Date:**
**Cost Est. Prepared By:**
**Phase Total Expenses By FY (All figures are in \$1,000's)**

	<b>Total Costs</b>	<b>Actual Costs</b>	<b>Prior FYs</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>5 Year Total</b>
<b>Construction</b>	\$12,200	\$0	\$0	\$4,504	\$5,862	\$1,832	\$0	\$0	\$12,200

**Phase Dates**

<b>Activity Name</b>	<b>Start Date</b>	<b>End Date</b>
Construction	7/1/2022	12/30/2024
Construction Material / Equipment Purchase	7/1/2022	7/31/2024

**Project Title:** Sewer Rehabilitation and Repair

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>
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**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY23	FY24	FY25	FY26	FY27	5 Year Total
\$12,200,000	\$0	\$4,504,389	\$5,862,941	\$1,832,670	\$0	\$0	\$12,200,000

**Description of CIP Changes:**

This is a new project added this year. This is to address any immediate/urgent rehabilitation/repair needs for the GLWA Collection System

**Project Title:** CSO Outfall Rehabilitation

**Project Status:** Active - Procurement - Construction

**CIP Type:** Program

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Programs

**Class Lvl 3:** Programs

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**


**Project Engineer/Manager:** Mini Panicker

**Director:** Biren Saparia

**Managing Dept.:** SCC

**Date Original Business Case Prepared:**  
 3/3/2017

**Year Project Added to CIP:** 2017

**CIP Budget:** Wastewater

**Project Jurisdiction:** Multiple Counties

**Lookup Location:** CSO Outfalls

**Funds and Cost Center:** Wastewater - 5421-882301

**Problem Statement:**

PROJECTS 222006 AND 233001 HAVE BEEN INCORPORATED INTO THIS PROJECT. Rehabilitation of the CSO outfalls is essential to properly discharge the uncontrollable combined sewer overflows to the receiving waters and to prevent sewer back up into the Conveyance System. Recent inspections of the outfalls revealed structural deficiencies like fractures, missing mortar from bricks etc. There are sediment and debris deposits in many of them.

**Scope of Work/Project Alternatives:**

Preliminary Scope of Work of the project is construction. Contract CS-168 will review the existing records, evaluate the existing conditions, and provide the necessary design to rehabilitate the outfalls. Another Engineering Services contract will be initiated after the CS-168 contract.

**Other Important Info:**

PROJECTS 222006 AND 233001 HAVE BEEN INCORPORATED INTO THIS PROJECT.

Project History: The construction of these outfalls are dated back to the early 1900s under various contracts.

Challenges: Some outfalls are below the river elevation; rehabilitation may be challenging.

**Primary Driver:** 2 - Performance

**Driver Explanation:**

Frequent uncontrolled CSOs from the outfalls

**Project Title:** CSO Outfall Rehabilitation

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**Scoring****Project Manager Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Risk Committee Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Project Title:** CSO Outfall Rehabilitation

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

**Phase Budget:** Wastewater

**Start Date:** 7/1/2022

**Phase Status:** Active

**End Date:** 6/30/2030

**Cost Allocation:** CTA

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:** Class 5

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$3,500	\$0	\$0	\$3,185	\$315	\$0	\$0	\$0	\$0	\$315	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2022	6/30/2030
Capital Delivery Salary	7/1/2022	6/30/2030
Contractual Professional Services	7/1/2022	6/30/2030
Other Capital Improvement Costs	7/1/2022	6/30/2030
Capitalized Interest	7/1/2022	6/30/2030

**Project Title:** CSO Outfall Rehabilitation

**Phase:** TBD / Future Allocation / General Holding # 1

**Phase Title:** New Construction for CSO Outfall Rehabilitation

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	7/1/2022
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	6/30/2030
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

This contract will provide the rehabilitation of the rest of the CSO outfalls.

<b>Cost Est. Class:</b> Class 1	<b>Cost Est. Source:</b> Contractor
<b>Cost Est. Date:</b> 8/31/2017	<b>Cost Est. Prepared By:</b> Biren Saparia

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>TBD / Future Allocation / General Holding # 1</b>	\$7,753	\$0	\$0	\$7,033	\$720	\$0	\$0	\$0	\$0	\$720	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Construction	7/1/2022	6/30/2030

**Project Title:** CSO Outfall Rehabilitation

**Phase:** TBD/Unallocated

**Phase Title:** TBD/Unallocated

**Phase Budget:** Wastewater

**Start Date:** 7/1/2022

**Phase Status:**
**End Date:** 6/30/2030

**Cost Allocation:**
**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**
**Cost Est. Class:**
**Cost Est. Source:**
**Cost Est. Date:**
**Cost Est. Prepared By:**
**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>TBD/Unallocated</b>	\$10,246	\$0	\$0	\$1,423	\$606	\$1,646	\$1,641	\$1,641	\$1,641	\$7,177	\$1,646

**Phase Dates**

Activity Name	Start Date	End Date
TBD Future Allocation	7/1/2022	6/30/2030



**Project Title:** CSO Outfall Rehabilitation

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**Phase:** Miscellaneous**Phase Title:** Miscellaneous

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**Phase Budget:** Wastewater**Start Date:** 7/1/2020**Phase Status:****End Date:** 6/30/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** Yes**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** CSO Outfall Rehabilitation

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>5 Year Total</b>	<b>FY18</b>	<b>FY19</b>	<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>Total</b>
2018	\$30,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$0	\$0	\$0	\$0	\$36,000
2019	\$34,336	\$0	\$507	\$3,826	\$10,001	\$10,001	\$10,001	\$10,001	\$0	\$0	\$0	\$44,337
2020	\$74,179	\$9	\$4,000	\$15,102	\$17,947	\$10,926	\$15,102	\$15,102	\$11,000	\$0	\$0	\$89,188
2021	\$52,076	\$0	\$3,331	\$4,802	\$11,706	\$9,156	\$11,995	\$10,976	\$8,243	\$4,197	\$0	\$64,406
2022	\$4,167	\$0	\$1	(\$1)	\$0	\$833	\$833	\$835	\$833	\$833	\$833	\$5,000

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<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>5 Year Total</b>	<b>FY28+</b>
\$21,500,000	\$0	\$11,641,572	\$1,641,572	\$1,646,070	\$1,641,572	\$1,641,572	\$1,641,572	\$8,212,358	\$1,646,070

**Description of CIP Changes:**

NA

**Project Title:** Phase 2 Outfalls- 19000796

**Project Status:** Project Execution - Construction

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Programs

**Class Lvl 3:** Programs

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



**Project Engineer/Manager:** Mini Panicker

**Director:** Biren Saparia

**Managing Dept.:** SCC

**Date Original Business Case Prepared:** 3/3/2017

**Year Project Added to CIP:** 2017

**CIP Budget:** Wastewater

**Project Jurisdiction:** Multiple Counties

**Lookup Location:** CSO Outfalls

**Funds and Cost Center:** Wastewater - 5421-882301

**Problem Statement:**

PROJECTS 222006 AND 233001 HAVE BEEN INCORPORATED INTO THIS PROJECT. Rehabilitation of the CSO outfalls is essential to properly discharge the uncontrollable combined sewer overflows to the receiving waters and to prevent sewer back up into the Conveyance System. Recent inspections of the outfalls revealed structural deficiencies like fractures, missing mortar from bricks etc. There are sediment and debris deposits in many of them.

**Scope of Work/Project Alternatives:**

Preliminary Scope of Work of the project is construction. Contract CS-168 will review the existing records, evaluate the existing conditions, and provide the necessary design to rehabilitate the outfalls. Another Engineering Services contract will be initiated after the CS-168 contract.

**Other Important Info:**

PROJECTS 222006 AND 233001 HAVE BEEN INCORPORATED INTO THIS PROJECT.

Project History: The construction of these outfalls are dated back to the early 1900s under various contracts.

Challenges: Some outfalls are below the river elevation; rehabilitation may be challenging.

**Primary Driver:** 2 - Performance

**Driver Explanation:**

Frequent uncontrolled CSO discharges to the Detroit River

**Project Title:** Phase 2 Outfalls- 19000796

---

**Scoring****Project Manager Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Risk Committee Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Project Title:** Phase 2 Outfalls- 19000796

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**Phase:** GLWA Salaries**Phase Title:** GLWA Salaries

---

<b>Phase Budget:</b>	<b>Start Date:</b> 11/1/2019
<b>Phase Status:</b>	<b>End Date:</b> 1/26/2021
<b>Cost Allocation:</b>	<b>Fund:</b> N/A - Not Applicable
<b>Funding Source:</b> Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b> No
	<b>Tot. Federal Loan Amount:</b> \$0.00

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**Phase Comments/Description:**

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<b>Cost Est. Class:</b>	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

---

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22
<b>GLWA Salaries</b>	\$23	\$12	\$12	\$11

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	11/1/2019	1/26/2021
Capital Delivery Salary	11/1/2019	1/26/2021
Contractual Professional Services	11/1/2019	1/26/2021
Other Capital Improvement Costs	11/1/2019	1/26/2021
Capitalized Interest	11/1/2019	1/26/2021

**Project Title:** Phase 2 Outfalls- 19000796

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**Phase:** Construction (Build) # 1 (CS-168, 1900076)**Phase Title:** CSO Outfall Rehabilitation Phase 2

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<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	11/1/2019
<b>Phase Status:</b>	Under Procurement	<b>End Date:</b>	1/26/2021
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

---

**Phase Comments/Description:**

This contract is to provide rehabilitation for nine (9) GLWA Outfalls (B-6, B-15, B-17, B-20, B-23, B-24, B-31, B-36, and B-45)

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22
<b>Construction (Build) # 1 (CS-168, 1900076)</b>	\$5,018	\$4,888	\$4,888	\$130

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (CS-168)	11/1/2019	1/26/2021
Construction (1900796)	11/1/2019	1/26/2021

**Project Title:** Phase 2 Outfalls- 19000796

---

**Phase:** Miscellaneous**Phase Title:** Miscellaneous

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**Phase Budget:** Wastewater**Start Date:** 7/1/2020**Phase Status:****End Date:** 6/30/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** Yes**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

---

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** Phase 2 Outfalls- 19000796

---

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>FY21</b>	<b>Total</b>
2022	\$2,849	\$5,051

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<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY22</b>
\$5,042,047	\$4,900,745	\$141,302

**Description of CIP Changes:**

None



**Project Title:** Phase 4 Outfalls

**Project Status:** Pending Closeout

**CIP Type:** Program

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Programs

**Class Lvl 3:** Programs

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



Phase IV construction at Outfall B-19

**Project Engineer/Manager:** Mini Panicker

**Director:** Biren Saparia

**Managing Dept.:** SCC

**Date Original Business Case Prepared:**  
3/3/2017

**Year Project Added to CIP:** 2017

**CIP Budget:** Wastewater

**Project Jurisdiction:** Multiple Counties

**Lookup Location:** CSO Outfalls

**Funds and Cost Center:** Wastewater - 5421-882301

**Problem Statement:**

PROJECTS 222006 AND 233001 HAVE BEEN INCORPORATED INTO THIS PROJECT. Rehabilitation of the CSO outfalls is essential to properly discharge the uncontrollable combined sewer overflows to the receiving waters and to prevent sewer back up into the Conveyance System. Recent inspections of the outfalls revealed structural deficiencies like fractures, missing mortar from bricks etc. There are sediment and debris deposits in many of them.

**Scope of Work/Project Alternatives:**

Preliminary Scope of Work of the project is construction. Contract CS-168 will review the existing records, evaluate the existing conditions, and provide the necessary design to rehabilitate the outfalls. Another Engineering Services contract will be initiated after the CS-168 contract.

**Other Important Info:**

PROJECTS 222006 AND 233001 HAVE BEEN INCORPORATED INTO THIS PROJECT.

**Project History:** The construction of these outfalls are dated back to the early 1900s under various contracts.

**Challenges:** Some outfalls are below the river elevation; rehabilitation may be challenging.

**Primary Driver:** 2 - Performance

**Driver Explanation:**

Frequently discharging outfalls

**Project Title:** Phase 4 Outfalls

---

**Scoring****Project Manager Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Risk Committee Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Project Title:** Phase 4 Outfalls

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

<b>Phase Budget:</b>	<b>Start Date:</b> 3/1/2020
<b>Phase Status:</b>	<b>End Date:</b> 9/1/2021
<b>Cost Allocation:</b>	<b>Fund:</b> N/A - Not Applicable
<b>Funding Source:</b> Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b> No
	<b>Tot. Federal Loan Amount:</b> \$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b>	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22
<b>GLWA Salaries</b>	\$87	\$15	\$15	\$71

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	3/1/2020	9/1/2021
Capital Delivery Salary	3/1/2020	9/1/2021
Contractual Professional Services	3/1/2020	9/1/2021
Other Capital Improvement Costs	3/1/2020	9/1/2021
Capitalized Interest	3/1/2020	9/1/2021

**Project Title:** Phase 4 Outfalls**Phase:** Construction (Build) # 1 (CS-168, 1902658)**Phase Title:** Rehabilitation of GLWA Outfalls-Phase IV

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	3/1/2020
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	9/1/2021
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

This Contract is for the construction of the rehabilitation designs prepared for CSO Outfalls B-9, B-12, B-14, B16, B-18, B-19, B21, B-22, B-27, B-28, and B-29. The construction documents were prepared under CS-168.

<b>Cost Est. Class:</b>	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22
<b>Construction (Build) # 1 (CS-168, 1902658)</b>	\$5,620	\$4,923	\$4,923	\$696

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (CS-168)	3/1/2020	9/1/2021
Construction (1902658)	3/1/2020	9/1/2021

**Project Title:** Phase 4 Outfalls

**Phase:** Miscellaneous

**Phase Title:** Miscellaneous

**Phase Budget:** Wastewater

**Start Date:** 7/1/2020

**Phase Status:**
**End Date:** 6/30/2021

**Cost Allocation:**
**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**
**Cost Est. Class:**
**Cost Est. Source:**
**Cost Est. Date:**
**Cost Est. Prepared By:**
**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** Phase 4 Outfalls

---

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>5 Year Total</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>Total</b>
2022	\$641	\$3,491	\$641	\$0	\$5,718

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<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY22</b>
\$5,707,478	\$4,938,826	\$768,653

**Description of CIP Changes:**

Not Active, Pending Closeout

**Project Title:** B-39 Outfall Rehabilitation

**Project Status:** Active - Procurement -  
Negotiation Phase - Construction

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Programs

**Class Lvl 3:** Programs

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



**Project Engineer/Manager:** Mini Panicker

**Director:** Biren Saparia

**Managing Dept.:** SCC

**Date Original Business Case Prepared:**  
3/11/2021

**Year Project Added to CIP:** 2021

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** CSO Outfalls

**Funds and Cost Center:** Wastewater - 5421-  
892111

**Problem Statement:**

: B-39 outfall was constructed in 1928. Findings from the recent investigations indicate that the outfall barrel is structurally compromised, with significant cracking, springline crushing, and general deterioration of the concrete liner. Rehabilitation of this CSO outfall is essential to properly discharge the uncontrollable combined sewer overflows to the receiving waters and to prevent sewer back up into the Conveyance System.

**Scope of Work/Project Alternatives:**

Scope of work to be performed for the rehabilitation of this outfall mainly includes isolation and dewatering of the outfall, repairing to seal the cracks/leaks, and heavy cleaning

**Other Important Info:**

NA

**Primary Driver:** 1 - Condition

**Driver Explanation:**

: During our evaluation in 2018, it was determined that the outfall tunnel is in a state of ongoing failure, that puts at risk the significant infrastructure immediately above and adjacent to the outfall

**Project Title:** B-39 Outfall Rehabilitation

**Scoring**
**Project Manager Weighted Score:** 75.70

Criteria Name	Score	Comment
Condition	5	Outfall B-39 was constructed in 1928. The outfall barrel is structurally compromised, with significant cracking, springline crushing, and general deterioration of the concrete liner.
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	3	
Health and Safety	3	
Public Benefit	3	
Financial	1	
Efficiency and Innovation	2	

**Risk Committee Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	



**Project Title:** B-39 Outfall Rehabilitation

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

**Phase Budget:**
**Start Date:** 6/1/2020

**Phase Status:**
**End Date:** 3/25/2023

**Cost Allocation:**
**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**
**Cost Est. Class:**
**Cost Est. Source:**
**Cost Est. Date:**
**Cost Est. Prepared By:**
**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	5 Year Total
<b>GLWA Salaries</b>	\$180	\$0	\$0	\$90	\$90	\$0	\$90

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	6/1/2020	3/25/2023
Capital Delivery Salary	6/1/2020	3/25/2023
Contractual Professional Services	6/1/2020	3/25/2023
Other Capital Improvement Costs	6/1/2020	3/25/2023
Capitalized Interest	6/1/2020	3/25/2023

**Project Title:** B-39 Outfall Rehabilitation

**Phase:** Design/Engineering

**Phase Title:** Design/Engineering

**Phase Budget:** Wastewater

**Start Date:** 6/1/2020

**Phase Status:**
**End Date:** 3/25/2023

**Cost Allocation:**
**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**
**Cost Est. Class:**
**Cost Est. Source:**
**Cost Est. Date:**
**Cost Est. Prepared By:**
**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	5 Year Total
<b>Design/Engineering</b>	\$388	\$150	\$150	\$238	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (CS-168)	6/1/2020	3/25/2023

**Project Title:** B-39 Outfall Rehabilitation

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**Phase:** Construction**Phase Title:** Construction

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**Phase Budget:** Wastewater**Start Date:** 1/29/2022**Phase Status:****End Date:** 3/25/2023**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	5 Year Total
Construction	\$8,186	\$0	\$0	\$2,885	\$5,301	\$5,301

**Phase Dates**

Activity Name	Start Date	End Date
Construction	1/29/2022	3/25/2023

**Project Title:** B-39 Outfall Rehabilitation

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>5 Year Total</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>Total</b>
2022	\$387	\$180	\$180	\$180	\$26	\$569

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<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>5 Year Total</b>
\$8,755,407	\$150,000	\$3,213,813	\$5,391,594	\$0	\$5,391,594

**Description of CIP Changes:**

This Project was added to FY 23 CIP Plan. AC 3/25/21

**Project Title:** B-40 Outfall Rehabilitation

**Project Status:** Pending Closeout

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Programs

**Class Lvl 3:** Programs

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



**Project Engineer/Manager:** Mini Panicker

**Director:** Biren Saparia

**Managing Dept.:** SCC

**Date Original Business Case Prepared:**  
2/1/2019

**Year Project Added to CIP:** 2022

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** CSO Outfalls

**Funds and Cost Center:** Wastewater - 5421-892111

**Problem Statement:**

The outlet for Outfall B-40 was originally constructed in 1887. In November, 2019, a shoreline collapse occurred immediately downstream of the outlet of Outfall B-40, causing a loss of ground into the Detroit River and displacing the outlet structure of Outfall B-40.

**Scope of Work/Project Alternatives:**

Scope of work was river bank restoration and seawall construction. As part of the seawall construction the collapsed B-40 outfall was reconstructed and integrated with the seawall. All functions of the outfall was restored.

**Other Important Info:**

Design/Construction of this project was completed by the property owner. GLWA Consultants provided the Construction supervision only.

**Primary Driver:** 1 - Condition

**Driver Explanation:**

Shoreline collapse resulted in the displacement of the outlet structure.

**Project Title:** B-40 Outfall Rehabilitation

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**Scoring****Project Manager Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Risk Committee Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Project Title:** B-40 Outfall Rehabilitation

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

**Phase Budget:**
**Start Date:** 6/1/2020

**Phase Status:**
**End Date:** 6/30/2021

**Cost Allocation:**
**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**
**Cost Est. Class:**
**Cost Est. Source:**
**Cost Est. Date:**
**Cost Est. Prepared By:**
**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22
<b>GLWA Salaries</b>	\$6	\$0	\$0	\$6

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	6/1/2020	6/30/2021
Capital Delivery Salary	6/1/2020	6/30/2021
Contractual Professional Services	6/1/2020	6/30/2021
Other Capital Improvement Costs	6/1/2020	6/30/2021
Capitalized Interest	6/1/2020	6/30/2021

**Project Title:** B-40 Outfall Rehabilitation

**Phase:** TBD / Future Allocation / General Holding

**Phase Title:** TBD / Future Allocation / General Holding

<b>Phase Budget:</b>	<b>Start Date:</b> 6/1/2020
<b>Phase Status:</b>	<b>End Date:</b> 6/30/2021
<b>Cost Allocation:</b>	<b>Fund:</b> N/A - Not Applicable
<b>Funding Source:</b> Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b> No
	<b>Tot. Federal Loan Amount:</b> \$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b>	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22
<b>TBD / Future Allocation / General Holding</b>	\$77	\$77	\$77	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (CS-168)	6/1/2020	6/30/2021
Design/Engineering (MISC)	1/1/2021	1/31/2021



**Project Title:** B-40 Outfall Rehabilitation

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>FY21</b>	<b>Total</b>
2022	\$22	\$89

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<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY22</b>
\$83,621	\$77,621	\$6,000

**Description of CIP Changes:**

Not Active. Pending Closeout

**Project Title:** Conveyance System Repairs ( Outfalls)

**Project Status:** Project Execution - Design

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Programs

**Class Lvl 3:** Programs

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**


**Project Engineer/Manager:** Mini Panicker

**Director:** Biren Saparia

**Managing Dept.:** SCC

**Date Original Business Case Prepared:**  
 8/24/2020

**Year Project Added to CIP:** 2020

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** CSO Outfalls

**Funds and Cost Center:** Wastewater - 5421-882301

**Problem Statement:**

Rehabilitation program of the existing CSO outfalls, sewers and interceptors is identified after the condition assessment. This rehabilitation and cleaning program is essential to optimize the transportation capacity of the GLWA collection system and to increase its life expectancy

**Scope of Work/Project Alternatives:**

Evaluate the existing conditions of the remaining CSO outfalls, provide the necessary cleaning/rehabilitation to optimize the design capacity of the collection system and to minimize the uncontrolled CSO discharges to the rivers

**Other Important Info:**

This Engineering Services contract also includes Joy Rd, Seven Mile, and Bates sewers which is being funded by the Sewer and Interceptor Rehabilitation Program, 260200

**Primary Driver:** 1 - Condition

**Driver Explanation:**

Many of these CSO outfalls have sediment deposits that results in transportation capacity limitation. Many have other O&M and Structural deficiencies

**Project Title:** Conveyance System Repairs ( Outfalls)**Scoring****Project Manager Weighted Score:** 74.20

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	3	
Health and Safety	3	
Public Benefit	3	
Financial	2	
Efficiency and Innovation	1	

**Risk Committee Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Project Title:** Conveyance System Repairs ( Outfalls)

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

**Phase Budget:**
**Start Date:** 4/1/2021

**Phase Status:**
**End Date:** 6/30/2028

**Cost Allocation:**
**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**
**Cost Est. Class:**
**Cost Est. Source:**
**Cost Est. Date:**
**Cost Est. Prepared By:**
**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$331	\$2	\$2	\$41	\$41	\$41	\$41	\$41	\$41	\$205	\$82

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	4/1/2021	6/30/2028
Capital Delivery Salary	4/1/2021	6/30/2028

**Project Title:** Conveyance System Repairs ( Outfalls)

**Phase:** TBD / Future Allocation / General Holding TBD

**Phase Title:** TBD / Future Allocation / General Holding

**Phase Budget:**

**Start Date:** 4/1/2021

**Phase Status:**

**End Date:** 6/30/2028

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>TBD / Future Allocation / General Holding TBD</b>	\$35,494	\$32	\$32	\$814	\$1,299	\$1,729	\$4,958	\$6,711	\$6,711	\$21,410	\$13,236

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	4/1/2021	3/30/2028
Design/Engineering (WW Field Services)	4/1/2021	3/30/2028
Construction	6/1/2023	6/30/2028

**Project Title:** Conveyance System Repairs ( Outfalls)

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>5 Year Total</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>Total</b>
2022	\$40,096	\$557	\$7,710	\$7,710	\$7,728	\$7,710	\$9,240	\$8,210	\$48,863

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<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>5 Year Total</b>	<b>FY28+</b>
\$35,825,256	\$34,594	\$855,699	\$1,340,350	\$1,770,804	\$5,000,000	\$6,752,306	\$6,752,305	\$21,615,765	\$13,319,198

**Description of CIP Changes:**

NA

**Project Title:** CSO FACILITIES IMPROVEMENT PROGRAM

**Project Status:** Project Execution - Design

**CIP Type:** Program

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Programs

**Class Lvl 3:** Programs

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



Conner Creek CSO Facility

**Project Engineer/Manager:** Chris Nastally

**Director:** Chris Nastally

**Managing Dept.:** CSO

**Date Original Business Case Prepared:**  
7/27/2016

**Year Project Added to CIP:** 2017

**CIP Budget:** Wastewater

**Project Jurisdiction:** Multiple Counties

**Lookup Location:** Conner Creek, Seven Mile, Puritan-Fenkell, Hubble-Southfield, Belle Isle, Oakwood CSO Basins, Baby Creek, Leib and St. Aubin Screening and Disinfection Facilities

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

This program is being established to facilitate the study, design, construction administration, and construction of improvements necessary to maintain the facilities which contribute to the CSO Control Program and compliance herewith.

**Scope of Work/Project Alternatives:**

This program is established to fund projects which may pop up in the near term of each fiscal year that were not budgeted for previously. Scope of work will vary from roof replacement, to equipment replacement, to various other facility improvements.

**Other Important Info:**

N/A

**Primary Driver:** Varies

**Driver Explanation:**

Driver will be based on need of each individual project which falls within the program.

**Project Title:** CSO FACILITIES IMPROVEMENT PROGRAM

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**Scoring****Project Manager Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Risk Committee Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	



**Project Title:** CSO FACILITIES IMPROVEMENT PROGRAM

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**Phase:** GLWA Salaries**Phase Title:** GLWA Salaries

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**Phase Budget:** Wastewater**Start Date:** 7/1/2020**Phase Status:****End Date:** 6/30/2031**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
<b>GLWA Salaries</b>	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2020	6/30/2031

**Project Title:** CSO FACILITIES IMPROVEMENT PROGRAM

**Phase:** TBD / Future Allocation / General Holding # 1

**Phase Title:** TBD / Future Allocation / General Holding # 1

<b>Phase Budget:</b>	<b>Start Date:</b> 7/1/2020
<b>Phase Status:</b>	<b>End Date:</b> 6/30/2031
<b>Cost Allocation:</b>	<b>Fund:</b> N/A - Not Applicable
<b>Funding Source:</b> Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b> No
	<b>Tot. Federal Loan Amount:</b> \$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b>	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>TBD / Future Allocation / General Holding # 1</b>	\$1,045,500	\$0	\$0	\$1,000	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$7,500	\$47,000

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (DSGN)	7/1/2022	6/30/2031
Design/Engineering (CA)	7/1/2024	6/30/2031
Design-Build	7/1/2020	6/30/2031
Construction	7/1/2024	6/30/2031

**Project Title:** CSO FACILITIES IMPROVEMENT PROGRAM

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**Phase:** Miscellaneous**Phase Title:** Miscellaneous

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**Phase Budget:** Wastewater**Start Date:** 7/1/2020**Phase Status:****End Date:** 6/30/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	<b>Total Costs</b>	<b>Actual Costs</b>	<b>Prior FYs</b>
<b>Miscellaneous</b>	\$0	\$0	\$0

**Phase Dates**

<b>Activity Name</b>	<b>Start Date</b>	<b>End Date</b>
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** CSO FACILITIES IMPROVEMENT PROGRAM

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2018	\$28,457	\$3,428	\$2,247	\$6,400	\$9,000	\$7,200	\$3,610	\$0	\$0	\$0	\$0	\$0	\$31,885
2019	\$31,548	\$764	\$1,658	\$9,277	\$6,218	\$2,351	\$4,351	\$9,351	\$11,251	\$0	\$0	\$0	\$45,221
2020	\$39,668	\$0	\$481	\$8,442	\$5,604	\$4,553	\$5,825	\$10,325	\$13,361	\$15,000	\$0	\$0	\$63,591
2021	\$53,396	\$0	\$0	\$6,742	\$7,555	\$7,492	\$10,289	\$10,576	\$4,759	\$20,280	\$85,250	\$0	\$152,943
2022	\$23,400	\$0	\$0	\$0	\$0	\$1,500	\$1,000	\$1,500	\$2,000	\$7,500	\$11,400	\$12,000	\$126,400

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$1,045,500,000	\$0	\$1,000,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$7,500,000	\$47,000,000

**Description of CIP Changes:**

260601 - CON-254 - Created new phase, \$555K contractors bid, estimated spend based on contractors tentative schedule.

260602 - Created new phase, moved \$980K from TBD to this project - CSO Fire Alarm Improvements.

260603 - CON-234, Updated FY costs based on actual contractors bid and potential change order to replace influent meters @ Conner Creek. This contract was bid in February 2018, awarded in 6/2018, and given the schedule, the Contractor will not complete work in FY19 as previously thought when it was bid.

260604 - Created new phase, shifted \$355K from TBD to this project - Baby Creek Influent Area Improvements

260605 - Created new phase, \$4.5M Budget for CSO Facilities Assessment Project

260606- Created new phase, moved \$300K from TBD to this project - Puritan Fenkell Roof Replacement.

260607 - Created new phase, costs are \$700K split over FY19 and FY20, FY19 from TBD- Leib Electrical Improvements Contract

TBD - Created new phase, Costs are estimated @ \$300K, 7 Mile Roof Replacement Project

TBD - Created new phase, Costs are estimated @ \$650K, Leib SDF HVAC Improvements Project

TBD - Created new phase, Costs are estimated @ \$150K, Baby Creek MAU Replacement - I&E funded.

TBD - Created new phase, Costs are estimated @ 650K, Baby Creek HVAC System Improvements - expands on the project to only replace the MAUs.

TBD - Created new phase, Costs are estimated @ \$400K, 7 Mile Parking lot, and Site Improvements Project

TBD - Created new phase, Costs are estimated @ \$11M, CSO Facilities Structural Improvements Design Build (based on Task CS-166 - Task C.05).

Modified the TBD allowance category for immediate years as projects become clearer. As previously indicated, this amount will steadily decrease as projects are defined, and will likely be removed once the CSO Assessment Project is completed.

**UPDATES IN 7-2019**

260605 - CS-299 CSO Facilities Assessment Project was removed from CIP. It is O&M and I&E funded because it is more of a study than a CIP project. It will lead to CIP projects and we can come back and capitalize it later if we so desire.

260610 - Baby Creek MAU Replacement project. Award was later than anticipated and equipment had 16 week lead time which led to funding being shifted from FY19 to FY20.

260612 - Puritan Fenkell & Seven Mile Instrumentation Project. This is to account for a CIP number that doesn't appear within the database but did exist briefly before we determined that this project was more appropriately funded from O&M. The CIP number had already been used in BigTime and so the decision was

**Project Title:** CSO FACILITIES IMPROVEMENT PROGRAM

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made to just assign the next project with the next CIP number Higher (260613).

260614 - CS-166 Task C.05 - Structural Improvements Project. In 2019 CIP this project was pushed back in the CIP to accommodate Conner/Freud impacts to the CIP budget. Due to lower than expected CIP spend, this project was pulled back forward for the 2020 CIP version to start in FY 20 (late FY 20 and carry through FY 24).

Added the following new projects

260616 - Baby Creek CSO Anchor and Wedge Improvement to West End Sewer

260617 - St. Aubin Screening and Disinfection Improvements

260618 - Oakwood HVAC Improvements.

Updated the unallocated amounts to account for CS-299 projects and also long term CSO control elements and cross-checked with AECOM for estimates. 08/2020

This year the structure of the CIP database was changed. All previous projects that were in the program previously have been pulled out and documented similar to non-program CIP projects.

260619 - CAFR group added a project by Chris VanPoppelen for controls to PF, St. Aubin and Leib to the program.

260620 - added roof replacement of Baby Creek to the program.

pulled out TBD amounts for projects added as a result of CS-299

**Project Title:** Oakwood CSO Control Facility Drain Valve Improvements

**Project Status:** Closed

**CIP Type:** Program

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Programs

**Class Lvl 3:** Programs

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



Leaking Conduit in Drain Vault

**Project Engineer/Manager:** Chris Nastally

**Director:** Chris Nastally

**Managing Dept.:** CSO

**Date Original Business Case Prepared:**  
 7/27/2016

**Year Project Added to CIP:** 2017

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** Oakwood CSO

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

Water infiltration through electrical conduits has caused cascading failures of vault valves, electrical and controls equipment. This has resulted in manual operation which creates difficulties operating and safety issues for continual access to this space (it's a deep vault).

**Scope of Work/Project Alternatives:**

This project will replace all electrical conduits that are compromised, valves, actuators, controls, sump pumps, and other items damaged from the vault flooding.

**Other Important Info:**

N/A

**Primary Driver:** 1 - Condition

**Driver Explanation:**

Conduit has failed and is allowing infiltration and causing a series of cascading failures of other systems in the vaults.

**Project Title:** Oakwood CSO Control Facility Drain Valve Improvements

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**Scoring****Project Manager Weighted Score:** 20.00

Criteria Name	Score	Comment
Condition	1	Scores carried over from previous year
Performance (Service Level/Reliability)	1	Scores carried over from previous year
Regulatory (Environmental/Legal)	1	Scores carried over from previous year
Operations and Maintenance	1	Scores carried over from previous year
Health and Safety	1	Scores carried over from previous year
Public Benefit	1	Scores carried over from previous year
Financial	1	Scores carried over from previous year
Efficiency and Innovation	1	Scores carried over from previous year

**Risk Committee Weighted Score:** 20.00

Criteria Name	Score	Comment
Condition	1	Scores carried over from previous year
Performance (Service Level/Reliability)	1	Scores carried over from previous year
Regulatory (Environmental/Legal)	1	Scores carried over from previous year
Operations and Maintenance	1	Scores carried over from previous year
Health and Safety	1	Scores carried over from previous year
Public Benefit	1	Scores carried over from previous year
Financial	1	Scores carried over from previous year
Efficiency and Innovation	1	Scores carried over from previous year

**Project Title:** Oakwood CSO Control Facility Drain Valve Improvements

**Phase:** GLWA Salaries

**Phase Title:** General - GLWA Salaries

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	6/18/2018
<b>Phase Status:</b>	Pending Close-out	<b>End Date:</b>	9/3/2020
<b>Cost Allocation:</b>	CSO 83/17	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	No
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 5	<b>Cost Est. Source:</b> Blue Sky Adventures!
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b> imaginary numbers!

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$117	\$117	\$117	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	6/18/2018	9/3/2020
Capital Delivery Salary	6/18/2018	9/3/2020
Contractual Professional Services	6/18/2018	9/3/2020
Other Capital Improvement Costs	6/18/2018	9/3/2020
Capitalized Interest	6/18/2018	9/3/2020



**Project Title:** Oakwood CSO Control Facility Drain Valve Improvements

**Phase:** Design # 1

**Phase Title:** Construction Assistance

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	12/16/2019
<b>Phase Status:</b>	Pending Close-out	<b>End Date:</b>	12/16/2019
<b>Cost Allocation:</b>	CSO 83/17	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

Establishes costs for assistance by designer for construction related items.

<b>Cost Est. Class:</b> Class 1	<b>Cost Est. Source:</b> Bid
<b>Cost Est. Date:</b> 8/3/2018	<b>Cost Est. Prepared By:</b> BID

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
<b>Design # 1</b>	\$28	\$28	\$28

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (1904707)	12/16/2019	12/16/2019

**Project Title:** Oakwood CSO Control Facility Drain Valve Improvements

**Phase:** Construction Assistance # 1

**Phase Title:** Construction Assistant

**Phase Budget:**

**Start Date:** 12/16/2019

**Phase Status:** Pending Close-out

**End Date:** 8/14/2020

**Cost Allocation:** CSO 83/17

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

costs associated with WTA construction assistance.

**Cost Est. Class:** Class 1

**Cost Est. Source:** Engineer

**Cost Est. Date:** 8/18/2020

**Cost Est. Prepared By:** Engineer

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
<b>Construction Assistance # 1</b>	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	12/16/2019	8/14/2020

**Project Title:** Oakwood CSO Control Facility Drain Valve Improvements

**Phase:** Construction (Build) # 1 (CON-254)

**Phase Title:** 260601 - Oakwood Drain Valve Improvements

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	6/18/2018
<b>Phase Status:</b>	Pending Close-out	<b>End Date:</b>	9/3/2020
<b>Cost Allocation:</b>	CSO 83/17	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

Project is to replace a series of failed equipment in drain vaults located adjacent to the Oakwood RTB. This equipment has failed causing operations to be completely manual and difficult to manage. This project includes replacement of compromised electrical conduits which leak groundwater into the vault, as well as new sump pumps and controls for the equipment. Project was extended to allow for replacement of drain vault valves which had been discovered to have failed. Valve replacement completed in July 2020 - after much delay from COVID-19.

<b>Cost Est. Class:</b> Class 1	<b>Cost Est. Source:</b> Contractor Bid
<b>Cost Est. Date:</b> 7/31/2019	<b>Cost Est. Prepared By:</b> Contractor

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Construction (Build) # 1 (CON-254)</b>	\$659	\$659	\$659	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Construction (CON-254)	6/18/2018	9/3/2020

**Project Title:** Oakwood CSO Control Facility Drain Valve Improvements

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2022	\$0	\$183	\$0	\$0	\$0	\$0	\$0	\$0	\$864

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$804,574	\$804,574	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Description of CIP Changes:**

7/22/2019: This project is nearly completed. It will be closed out in the next month or two.

7-16-2020 - Project was extended (time-wise, and budget-wise) to allow for replacement of drain valves which were discovered to all have failed seals during the testing of the newly constructed work. Budget and schedule adjusted.

**Project Title:** Conner Creek CSO RTB Automation Improvements

**Project Status:** Project Execution - Construction

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Programs

**Class Lvl 3:** Programs

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



Effluent Relief Gate Repair

**Project Engineer/Manager:** Ihsan Wahab

**Director:** Chris Nastally

**Managing Dept.:** WW Construction Eng

**Date Original Business Case Prepared:** 7/27/2016

**Year Project Added to CIP:** 2017

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** Conner Creek

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

Effluent gates were leaking with river water in the basin. Based on CS-116 study, seals and seats of some of Effluent Relief gates found to be damaged. A data network style connection was used (versus hardwired) between the gates and the SCADA system. This network has been unreliable and difficult to maintain. Electrical and control cables were compromised due to their installation on the top of the concrete slab of RTB roof.

**Scope of Work/Project Alternatives:**

Scope work includes but not limited to replacement of existing seals and seats of effluent relief gates (ERGs) and effluent launder gates (ELGs), replacement and alignment of stems for ELGs, assessment and replacement of ERGs stems (based on assessment), existing pull boxes and cover replacement on top of RTB roof, existing fiber optic cable and conduit replacement, hard-wiring ELGs and ERGs actuators for reliable operation, secondary power feed for effluent gates, replacement of RIO5 and RIO6, logic modification to allow SCC control of screening gates and ERGs, etc. As part of this contract, existing five influent flowmeters will be replaced.

**Other Important Info:**

CS-172 has been closed out as of 09/23/19. Influent flowmeters replacement work is added as part of CCD-A and CO No. 2 of this contract.

**Primary Driver:** 1 - Condition

**Driver Explanation:**

The existing effluent gates were not reliable in operation and leaking river water in the basin. These gates, specially ERGs need to be in proper operation during wet weather event to avoid potential basement flooding in nearby neighborhood.

**Project Title:** Conner Creek CSO RTB Automation Improvements

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**Scoring****Project Manager Weighted Score:** 20.00

Criteria Name	Score	Comment
Condition	1	Scores carried over from previous year
Performance (Service Level/Reliability)	1	Scores carried over from previous year
Regulatory (Environmental/Legal)	1	Scores carried over from previous year
Operations and Maintenance	1	Scores carried over from previous year
Health and Safety	1	Scores carried over from previous year
Public Benefit	1	Scores carried over from previous year
Financial	1	Scores carried over from previous year
Efficiency and Innovation	1	Scores carried over from previous year

**Risk Committee Weighted Score:** 20.00

Criteria Name	Score	Comment
Condition	1	Scores carried over from previous year
Performance (Service Level/Reliability)	1	Scores carried over from previous year
Regulatory (Environmental/Legal)	1	Scores carried over from previous year
Operations and Maintenance	1	Scores carried over from previous year
Health and Safety	1	Scores carried over from previous year
Public Benefit	1	Scores carried over from previous year
Financial	1	Scores carried over from previous year
Efficiency and Innovation	1	Scores carried over from previous year

**Project Title:** Conner Creek CSO RTB Automation Improvements

**Phase:** GLWA Salaries

**Phase Title:** General - GLWA Salaries

**Phase Budget:** Wastewater

**Start Date:** 7/1/2017

**Phase Status:** Active

**End Date:** 6/30/2022

**Cost Allocation:** CSO 83/17

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:** Class 5

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$358	\$280	\$280	\$77	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2017	6/30/2022
Capital Delivery Salary	7/1/2017	6/30/2022
Contractual Professional Services	7/1/2017	6/30/2022
Other Capital Improvement Costs	7/1/2017	6/30/2022
Capitalized Interest	7/1/2017	6/30/2022

**Project Title:** Conner Creek CSO RTB Automation Improvements

**Phase:** Design & Construction Assistance # 1 (CS-172, CS-116, CS-166, CON-234)

**Phase Title:** 260603 - CS-172 - Conner Creek CSO RTB Automation Improvements

<b>Phase Budget:</b> Wastewater	<b>Start Date:</b> 7/1/2017
<b>Phase Status:</b> Closed Out	<b>End Date:</b> 6/30/2022
<b>Cost Allocation:</b> CSO 83/17	<b>Fund:</b> N/A - Not Applicable
<b>Funding Source:</b> Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b> No
<b>Tot. Federal Loan Amount:</b> \$0.00	

**Phase Comments/Description:**

CS-172 Design Phase, moving to contruction assistance phase.

<b>Cost Est. Class:</b> Class 1	<b>Cost Est. Source:</b> HDR - Budget
<b>Cost Est. Date:</b> 11/1/2017	<b>Cost Est. Prepared By:</b> HDR

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Design &amp; Construction Assistance # 1 (CS-172, CS-116, CS-166, CON-234)</b>	\$486	\$363	\$363	\$123	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (CS-172)	7/1/2017	9/23/2019
Design/Engineering (CS-116)	1/1/2020	6/30/2022
Design/Engineering (CS-166)	7/1/2018	4/30/2021
Design/Engineering (MISC)	7/1/2017	6/29/2018



**Project Title:** Conner Creek CSO RTB Automation Improvements

**Phase:** Construction (Build) # 1 (CON-234)

**Phase Title:** 260603 - CON-234 Conner Creek Effluent Gate Improvements Project

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	6/12/2018
<b>Phase Status:</b>	Project Execution	<b>End Date:</b>	6/7/2022
<b>Cost Allocation:</b>	CSO 83/17	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

Construction for CS 116 (Package A) and CS-172 (Package B) - rehabilitation of the effluent relief and effluent launder gates, actuators, and misc. electrical improvements. This project also includes replacement of existing five influent flowmeters for Conner Creek Facility operation.

<b>Cost Est. Class:</b> Class 1	<b>Cost Est. Source:</b> Construction Bid
<b>Cost Est. Date:</b> 7/31/2019	<b>Cost Est. Prepared By:</b> Weiss

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	5 Year Total
<b>Construction (Build) # 1 (CON-234)</b>	\$7,264	\$6,808	\$6,808	\$456	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Construction (CON-234)	6/12/2018	6/7/2022

**Project Title:** Conner Creek CSO RTB Automation Improvements

**Phase:** Miscellaneous

**Phase Title:** Miscellaneous

**Phase Budget:** Wastewater

**Start Date:** 5/1/2010

**Phase Status:**

**End Date:** 6/30/2021

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$65	\$65	\$65

**Phase Dates**

Activity Name	Start Date	End Date
Pre-CAFR Actuals	5/1/2010	6/30/2015
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** Conner Creek CSO RTB Automation Improvements

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>5 Year Total</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>Total</b>
2022	\$0	\$908	\$0	\$0	\$0	\$0	\$0	\$0	\$7,899

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<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>5 Year Total</b>	<b>FY28+</b>
\$8,175,393	\$7,518,411	\$656,982	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Description of CIP Changes:**

N/A

**Project Title:** Seven Mile RTB - Parking Lot Replacement & Misc. Site Work

**Project Status:** Closed

**CIP Type:** Program

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Programs

**Class Lvl 3:** Programs

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



New Parking Lot and Hatch Work

**Project Engineer/Manager:** Matthew Krieger

**Director:** Chris Nastally

**Managing Dept.:** CSO

**Date Original Business Case Prepared:** 7/27/2016

**Year Project Added to CIP:** 2017

**CIP Budget:** Wastewater

**Project Jurisdiction:** Multiple Counties

**Lookup Location:** 7 Mile CSO

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

The 7 Mile Parking Lot is failing in many locations, traps water in many locations, and slopes towards the building directing water towards the building during rain. See scope of work for additional problems addressed by this project.

**Scope of Work/Project Alternatives:**

In addition to the problem statement, the grading in the front and side of the site slopes towards the building with no catch basins also creating water infiltration issues inside of the building. The sidewalk has completely failed and the hatch at the front entrance has damage to it leaving a hole to trip or injure someone. This project will fix the parking lot, grading issues, sidewalk, and hatch. This project will also address landscaping (because of regrading) and provide landscaping which requires minimal maintenance to keep the aesthetics of the building looking good.

**Other Important Info:**

Rain Water is pooling near the back up generator and presents a safety hazard.

**Primary Driver:** 1 - Condition

**Driver Explanation:**

The condition of the parking lot is causing water to pool near the back up generators and is causing degradation of the foundation and exterior brick.

**Project Title:** Seven Mile RTB - Parking Lot Replacement & Misc. Site Work

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**Scoring****Project Manager Weighted Score:** 20.00

Criteria Name	Score	Comment
Condition	1	Scores carried over from previous year
Performance (Service Level/Reliability)	1	Scores carried over from previous year
Regulatory (Environmental/Legal)	1	Scores carried over from previous year
Operations and Maintenance	1	Scores carried over from previous year
Health and Safety	1	Scores carried over from previous year
Public Benefit	1	Scores carried over from previous year
Financial	1	Scores carried over from previous year
Efficiency and Innovation	1	Scores carried over from previous year

**Risk Committee Weighted Score:** 20.00

Criteria Name	Score	Comment
Condition	1	Scores carried over from previous year
Performance (Service Level/Reliability)	1	Scores carried over from previous year
Regulatory (Environmental/Legal)	1	Scores carried over from previous year
Operations and Maintenance	1	Scores carried over from previous year
Health and Safety	1	Scores carried over from previous year
Public Benefit	1	Scores carried over from previous year
Financial	1	Scores carried over from previous year
Efficiency and Innovation	1	Scores carried over from previous year

**Project Title:** Seven Mile RTB - Parking Lot Replacement & Misc. Site Work

**Phase:** GLWA Salaries

**Phase Title:** General - GLWA Salaries

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	9/6/2019
<b>Phase Status:</b>	Pending Close-out	<b>End Date:</b>	7/31/2020
<b>Cost Allocation:</b>	CSO 83/17	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	No
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 5	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$31	\$31	\$31	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	9/6/2019	7/31/2020
Capital Delivery Salary	9/6/2019	7/31/2020
Professional Services (CS-272 - 72003A.06)	9/6/2019	7/31/2020
Contractual Professional Services	9/6/2019	7/31/2020
Other Capital Improvement Costs	9/6/2019	7/31/2020
Capitalized Interest	9/6/2019	7/31/2020

**Project Title:** Seven Mile RTB - Parking Lot Replacement & Misc. Site Work

**Phase:** Construction (Build) # 1 (1804112, 1802878)

**Phase Title:** 260609 - 7 Mile Parking Lot and Site Grading Improvements Project

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	9/6/2019
<b>Phase Status:</b>	Pending Close-out	<b>End Date:</b>	7/31/2020
<b>Cost Allocation:</b>	CSO 83/17	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

The 7 Mile Parking Lot is failing in many locations, traps water in many locations, and slopes towards the building directing water towards the building during rain. Furthermore, the grading in the front and side of the site slopes towards the building with no catch basins also creating water infiltration issues in side of the building. The sidewalk has completely failed and the hatch at the front entrance has damage to it leaving a hole to trip or injur someone. This project will fix the parking lot, grading issues, sidewalk, and hatch. This project will also address landscaping (because of regrading) and provide landscaping which requires minimal maintenance to keep the aesthetics of the building looking good.

<b>Cost Est. Class:</b> Class 1	<b>Cost Est. Source:</b> Contractor BID
<b>Cost Est. Date:</b> 7/3/2019	<b>Cost Est. Prepared By:</b> Lasalle

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
<b>Construction (Build) # 1 (1804112, 1802878)</b>	\$398	\$398	\$398

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (1802878)	6/1/2020	6/30/2020
Construction (1804112)	9/6/2019	7/31/2020

**Project Title:** Seven Mile RTB - Parking Lot Replacement & Misc. Site Work

**Phase:** Miscellaneous

**Phase Title:** Miscellaneous

**Phase Budget:** Wastewater

**Start Date:** 7/1/2020

**Phase Status:**

**End Date:** 6/30/2021

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021



**Project Title:** Seven Mile RTB - Parking Lot Replacement & Misc. Site Work

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>5 Year Total</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>Total</b>
2022	\$0	\$47	\$0	\$0	\$0	\$0	\$0	\$0	\$416

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<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>5 Year Total</b>	<b>FY28+</b>
\$429,557	\$429,557	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Description of CIP Changes:**

7-2020 - Updated to reflect current project status.

**Project Title:** Baby Creek SDF - HV Units Replacement

**Project Status:** Closed

**CIP Type:** Program

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Programs

**Class Lvl 3:** Programs

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



New Air Handling Unit

**Project Engineer/Manager:** Kashmira Patel

**Director:** Chris Nastally

**Managing Dept.:** CSO

**Date Original Business Case Prepared:** 7/27/2016

**Year Project Added to CIP:** 2017

**CIP Budget:** Wastewater

**Project Jurisdiction:** Wayne County - Outside Detroit

**Lookup Location:** Dearborn

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

Replace Make Up Air Units at Baby Creek as they are past their life and non-efficient due to their installation orientation.

**Scope of Work/Project Alternatives:**

Replacing existing make up air units with a newly designed unit to increase air flow to the space as well as increase temperature control in the screening area.

**Other Important Info:**

N/A

**Primary Driver:** 1 - Condition

**Driver Explanation:**

Existing units were old and non-efficient to provide enough air flow to the screening area.

**Project Title:** Baby Creek SDF - HV Units Replacement

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**Scoring****Project Manager Weighted Score:** 20.00

Criteria Name	Score	Comment
Condition	1	Scores carried over from previous year
Performance (Service Level/Reliability)	1	Scores carried over from previous year
Regulatory (Environmental/Legal)	1	Scores carried over from previous year
Operations and Maintenance	1	Scores carried over from previous year
Health and Safety	1	Scores carried over from previous year
Public Benefit	1	Scores carried over from previous year
Financial	1	Scores carried over from previous year
Efficiency and Innovation	1	Scores carried over from previous year

**Risk Committee Weighted Score:** 20.00

Criteria Name	Score	Comment
Condition	1	Scores carried over from previous year
Performance (Service Level/Reliability)	1	Scores carried over from previous year
Regulatory (Environmental/Legal)	1	Scores carried over from previous year
Operations and Maintenance	1	Scores carried over from previous year
Health and Safety	1	Scores carried over from previous year
Public Benefit	1	Scores carried over from previous year
Financial	1	Scores carried over from previous year
Efficiency and Innovation	1	Scores carried over from previous year

**Project Title:** Baby Creek SDF - HV Units Replacement

**Phase:** GLWA Salaries

**Phase Title:** General - GLWA Salaries

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	3/11/2019
<b>Phase Status:</b>	Pending Close-out	<b>End Date:</b>	3/10/2020
<b>Cost Allocation:</b>	CSO 83/17	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	No
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

**Cost Est. Class:** Class 5

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$11	\$11	\$11	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	3/11/2019	3/10/2020
Capital Delivery Salary	3/11/2019	3/10/2020
Professional Services (CS-272 - 72003A.07)	3/11/2019	3/10/2020
Contractual Professional Services	3/11/2019	3/10/2020
Other Capital Improvement Costs	3/11/2019	3/10/2020
Capitalized Interest	3/11/2019	3/10/2020

**Project Title:** Baby Creek SDF - HV Units Replacement

**Phase:** Construction (Build) # 1 (1803113)

**Phase Title:** 260610 - Baby Creek SDF - HV Units Replacement

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	3/11/2019
<b>Phase Status:</b>	Pending Close-out	<b>End Date:</b>	3/10/2020
<b>Cost Allocation:</b>	CSO 83/17	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

Replace Make Up Air Units @ Baby Creek as they are past their life, and rusting out.

<b>Cost Est. Class:</b> Class 1	<b>Cost Est. Source:</b> Construction Bid
<b>Cost Est. Date:</b> 12/10/2018	<b>Cost Est. Prepared By:</b> De-Cal

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Construction (Build) # 1 (1803113)</b>	\$263	\$263	\$263	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Construction (1803113)	3/11/2019	3/10/2020

**Project Title:** Baby Creek SDF - HV Units Replacement

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>5 Year Total</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>Total</b>
2022	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$275

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<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>5 Year Total</b>	<b>FY28+</b>
\$275,151	\$275,151	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Description of CIP Changes:**

N/A

**Project Title:** Leib SDF- HVAC System Improvements

**Project Status:** Closed

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Programs

**Class Lvl 3:** Programs

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



Leib HVAC - Frozen Dampers

**Project Engineer/Manager:** Kashmira Patel

**Director:** Chris Nastally

**Managing Dept.:** CSO

**Date Original Business Case Prepared:** 7/27/2016

**Year Project Added to CIP:** 2018

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** Detroit

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

Many components of the Leib HVAC system have failed. These are causing ventilation issues, air quality issues, and likely are also a source of increased/accelerated corrosion of equipment in the facility. Two relief dampers on each end of the facility have been frozen and not in operation.

**Scope of Work/Project Alternatives:**

The scope of work includes but not limited to replacement of 60" damper with access door in thee basin, replacement of relief air dampers and actuators on existing louvers at both end of the facility, provide new HVAC DDC system, etc.

**Other Important Info:**

CO No.1 was issued in 03/2020 due to GLWA's denial of Decima as their subcontractor. Additional amount of \$100,962 and time extension was added to this project as part of CO No. 1.

**Primary Driver:** 1 - Condition

**Driver Explanation:**

Some of existing HVAC equipment are not in operable condition and out of their service life. These equipment need replacement to provide proper air flow within the facility to eliminate condensation issue. A new DDC system will be installed as part of this project.

**Project Title:** Leib SDF- HVAC System Improvements

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**Scoring****Project Manager Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Risk Committee Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	



**Project Title:** Leib SDF- HVAC System Improvements

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	6/17/2019
<b>Phase Status:</b>	Project Execution	<b>End Date:</b>	7/31/2021
<b>Cost Allocation:</b>	CSO 83/17	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	No
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b>	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$80	\$80	\$80	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	6/17/2019	7/31/2021
Capital Delivery Salary	6/17/2019	7/31/2021
Professional Services (CS-272 - 72003A.08)	6/17/2019	7/31/2021
Contractual Professional Services	6/17/2019	7/31/2021
Other Capital Improvement Costs	6/17/2019	7/31/2021
Capitalized Interest	6/17/2019	7/31/2021

**Project Title:** Leib SDF- HVAC System Improvements

**Phase:** Design/Engineering # 1 (CS-255)

**Phase Title:** Design/Engineering # 1 (CS-255)

**Phase Budget:** Wastewater

**Start Date:** 7/1/2021

**Phase Status:**

**End Date:** 7/31/2021

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	<b>Total Costs</b>	<b>Actual Costs</b>	<b>Prior FYs</b>	<b>FY22</b>
<b>Design/Engineering # 1 (CS-255)</b>	\$10	\$10	\$10	\$0

**Phase Dates**

<b>Activity Name</b>	<b>Start Date</b>	<b>End Date</b>
Design/Engineering (CS-255)	7/1/2021	7/31/2021

**Project Title:** Leib SDF- HVAC System Improvements

**Phase:** Construction (Build) # 1 (1803718)

**Phase Title:** 260611 - Leib SDF - HVAC System Improvements

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	6/17/2019
<b>Phase Status:</b>	Project Execution	<b>End Date:</b>	5/18/2021
<b>Cost Allocation:</b>	CSO 83/17	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	No
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

Existing HVAC system has been compromised with non-functional dampers, DDC system and need a replacement. Also, there is no existing temp sensor in the basin to monitor the temp.

<b>Cost Est. Class:</b> Class 1	<b>Cost Est. Source:</b> Construction Bid
<b>Cost Est. Date:</b> 6/17/2019	<b>Cost Est. Prepared By:</b> LGC

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Construction (Build) # 1 (1803718)</b>	\$321	\$321	\$321	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Construction (1803718)	6/17/2019	5/18/2021

**Project Title:** Leib SDF- HVAC System Improvements

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**Phase:** Miscellaneous**Phase Title:** Miscellaneous

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**Phase Budget:** Wastewater**Start Date:** 7/1/2020**Phase Status:****End Date:** 6/30/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** Leib SDF- HVAC System Improvements

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>5 Year Total</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>Total</b>
2022	\$0	\$300	\$0	\$0	\$0	\$0	\$0	\$0	\$395

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<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>5 Year Total</b>	<b>FY28+</b>
\$412,590	\$412,590	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Description of CIP Changes:**

N/A

**Project Title:** Baby Creek HVAC Improvements

**Project Status:** Project Execution - Construction

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Programs

**Class Lvl 3:** Programs

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



Existing Dampers

**Project Engineer/Manager:** Kashmira Patel

**Director:** Chris Nastally

**Managing Dept.:** CSO

**Date Original Business Case Prepared:** 7/27/2016

**Year Project Added to CIP:** 2017

**CIP Budget:** Wastewater

**Project Jurisdiction:** Wayne County - Outside Detroit

**Lookup Location:** Dearborn

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

This project expands on the MAU replacement project by addressing other HVAC issues throughout the facility, such as control building, screening building, etc.

**Scope of Work/Project Alternatives:**

The scope of work includes but not limited to modifications to ventilation system in the Electrical room, replacement of dampers and actuators in the screening building, replacement of actuators for dampers in chem room, installation of temp sensors throughout control buildings, installation of new DDC system.

**Other Important Info:**

N/A

**Primary Driver:** 2 - Performance

**Driver Explanation:**

To improve HVAC performance and air quality in head-work area as well as control building.

**Project Title:** Baby Creek HVAC Improvements

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**Scoring****Project Manager Weighted Score:** 20.00

Criteria Name	Score	Comment
Condition	1	Scores carried over from previous year
Performance (Service Level/Reliability)	1	Scores carried over from previous year
Regulatory (Environmental/Legal)	1	Scores carried over from previous year
Operations and Maintenance	1	Scores carried over from previous year
Health and Safety	1	Scores carried over from previous year
Public Benefit	1	Scores carried over from previous year
Financial	1	Scores carried over from previous year
Efficiency and Innovation	1	Scores carried over from previous year

**Risk Committee Weighted Score:** 20.00

Criteria Name	Score	Comment
Condition	1	Scores carried over from previous year
Performance (Service Level/Reliability)	1	Scores carried over from previous year
Regulatory (Environmental/Legal)	1	Scores carried over from previous year
Operations and Maintenance	1	Scores carried over from previous year
Health and Safety	1	Scores carried over from previous year
Public Benefit	1	Scores carried over from previous year
Financial	1	Scores carried over from previous year
Efficiency and Innovation	1	Scores carried over from previous year

**Project Title:** Baby Creek HVAC Improvements

**Phase:** GLWA Salaries

**Phase Title:** General - GLWA Salaries

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	10/10/2019
<b>Phase Status:</b>	Project Execution	<b>End Date:</b>	9/13/2021
<b>Cost Allocation:</b>	CSO 83/17	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	No
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 5	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22
<b>GLWA Salaries</b>	\$52	\$40	\$40	\$11

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	1/8/2020	9/13/2021
Capital Delivery Salary	1/8/2020	9/13/2021
Professional Services (CS-272 - 72003A.09)	10/10/2019	9/13/2021
Contractual Professional Services	1/8/2020	9/13/2021
Other Capital Improvement Costs	1/8/2020	9/13/2021
Capitalized Interest	1/8/2020	9/13/2021



**Project Title:** Baby Creek HVAC Improvements

**Phase:** Construction (Build) # 1 (1901609, 1803675)

**Phase Title:** 260613 - Baby Creek SDF - HVAC System Improvements

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	1/8/2020
<b>Phase Status:</b>	Project Execution	<b>End Date:</b>	9/13/2021
<b>Cost Allocation:</b>	CSO 83/17	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

This project expands on the MAU replacement project by addressing system controls throughout the facility, ventilation issues, and odor control issues.

<b>Cost Est. Class:</b> Class 1	<b>Cost Est. Source:</b> Construction Bid
<b>Cost Est. Date:</b> 1/8/2020	<b>Cost Est. Prepared By:</b> PTS

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22
<b>Construction (Build) # 1 (1901609, 1803675)</b>	\$551	\$489	\$489	\$62

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (1803675)	1/8/2020	1/8/2021
Construction (1901609)	1/8/2020	9/13/2021

**Project Title:** Baby Creek HVAC Improvements

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**Phase:** Miscellaneous**Phase Title:** Miscellaneous

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**Phase Budget:** Wastewater**Start Date:** 7/1/2020**Phase Status:****End Date:** 6/30/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** Yes**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** Baby Creek HVAC Improvements

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>FY21</b>	<b>Total</b>
2022	\$536	\$588

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<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY22</b>
\$604,164	\$529,906	\$74,258

**Description of CIP Changes:**

Cost and schedule changes were done - 06/21.

**Project Title:** Structural Inspection & Structural Improvements

**Project Status:** Project Execution - Construction

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Programs

**Class Lvl 3:** Programs

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



Existing Structural Condition

**Project Engineer/Manager:** Kashmira Patel

**Director:** Chris Nastally

**Managing Dept.:** CSO

**Date Original Business Case Prepared:** 7/27/2016

**Year Project Added to CIP:** 2017

**CIP Budget:** Wastewater

**Project Jurisdiction:** Multiple Counties

**Lookup Location:** Wayne

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

A partial structural condition assessment has been performed and structural improvement (types) identified and prioritized. This project will provide Design-Build service to completely inspect all CSO Facilities (above and below ground) and prioritize to be carried out over a 3-5 year period.

**Scope of Work/Project Alternatives:**

The scope of work includes at each of nine CSO facilities such as a complete field assessment and structural condition report, classification of recommended repairs into levels of urgency, estimating quantities and the costs of repairs, developing a three-year repair program to address high priority repairs, design and implementation of agreed upon repairs, preparation of as-built drawings and final project report, etc. The Work includes improvements to be designed, administered, and constructed by the D/B Contractor at all nine CSO facilities.

**Other Important Info:**

Consideration of Shared Service Agreement with DWSD regarding the costing for Belle Isle facility.

**Primary Driver:** 1 - Condition

**Driver Explanation:**

CSO Facilities are on average of 16 years old. They are in need of some repairs throughout to keep them operating reliable and safe for the future. An initial partial structural inspection of these CSO Facilities was conducted through a separate contract, which had identified various improvements needed at each facility to ensure reliability and resiliency of continuous operation of CSO facilities for the next 20-years.

**Project Title:** Structural Inspection & Structural Improvements

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**Scoring****Project Manager Weighted Score:** 20.00

Criteria Name	Score	Comment
Condition	1	Scores carried over from previous year
Performance (Service Level/Reliability)	1	Scores carried over from previous year
Regulatory (Environmental/Legal)	1	Scores carried over from previous year
Operations and Maintenance	1	Scores carried over from previous year
Health and Safety	1	Scores carried over from previous year
Public Benefit	1	Scores carried over from previous year
Financial	1	Scores carried over from previous year
Efficiency and Innovation	1	Scores carried over from previous year

**Risk Committee Weighted Score:** 20.00

Criteria Name	Score	Comment
Condition	1	Scores carried over from previous year
Performance (Service Level/Reliability)	1	Scores carried over from previous year
Regulatory (Environmental/Legal)	1	Scores carried over from previous year
Operations and Maintenance	1	Scores carried over from previous year
Health and Safety	1	Scores carried over from previous year
Public Benefit	1	Scores carried over from previous year
Financial	1	Scores carried over from previous year
Efficiency and Innovation	1	Scores carried over from previous year

**Project Title:** Structural Inspection & Structural Improvements

**Phase:** GLWA Salaries

**Phase Title:** General - GLWA Salaries

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	8/19/2019
<b>Phase Status:</b>	Active - Procurement - Board Approved	<b>End Date:</b>	1/3/2025
<b>Cost Allocation:</b>	CSO 83/17	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	No
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 5	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$119	\$25	\$25	\$26	\$26	\$26	\$15	\$0	\$0	\$68	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	10/2/2020	1/3/2025
Capital Delivery Salary	10/2/2020	1/3/2025
Professional Services (CS-272 - 72009A.05)	8/19/2019	5/19/2023
Contractual Professional Services	10/2/2020	1/3/2025
Other Capital Improvement Costs	10/2/2020	1/3/2025
Capitalized Interest	10/2/2020	1/3/2025

**Project Title:** Structural Inspection & Structural Improvements

**Phase:** Construction Assistance (CS-166)

**Phase Title:** CS-166 - Task D.11 - CA services

<b>Phase Budget:</b> Wastewater	<b>Start Date:</b> 10/2/2020
<b>Phase Status:</b> Project Execution	<b>End Date:</b> 12/31/2024
<b>Cost Allocation:</b> CSO 83/17	<b>Fund:</b> N/A - Not Applicable
<b>Funding Source:</b> Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b> No
<b>Tot. Federal Loan Amount:</b> \$0.00	

**Phase Comments/Description:**

CA services during the progression of D/B contract.

<b>Cost Est. Class:</b> Class 1	<b>Cost Est. Source:</b> Engineer's proposal
<b>Cost Est. Date:</b> 10/12/2019	<b>Cost Est. Prepared By:</b> PMA

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	5 Year Total
<b>Construction Assistance (CS-166)</b>	\$1,325	\$359	\$359	\$268	\$268	\$269	\$158	\$696

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (CS-166)	10/2/2020	12/31/2024
Interlocal Agreement or Intergovernmental Agreement (CS-166)	4/1/2021	4/30/2021

**Project Title:** Structural Inspection & Structural Improvements

**Phase:** Design-Build # 1 (1902224)

**Phase Title:** 260614 - CSO Facilities - Structural Improvements Project (CS-166 - Task C.05)

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	1/4/2021
<b>Phase Status:</b>	Active - Procurement - Board Approved	<b>End Date:</b>	1/3/2025
<b>Cost Allocation:</b>	CSO 83/17	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

A partial structural condition assessment has been performed and structural improvement (types) identified and prioritized. This project will provie Design-Build services to completely inspect all CSO Facilities (above and below ground) and prioritize repairs to be carried out over a 3-5 year period.

<b>Cost Est. Class:</b> Class 1	<b>Cost Est. Source:</b> Construction Bid
<b>Cost Est. Date:</b> 8/5/2020	<b>Cost Est. Prepared By:</b> Pullman

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Design-Build # 1 (1902224)</b>	\$12,145	\$2,152	\$2,152	\$2,805	\$2,805	\$2,813	\$1,567	\$0	\$0	\$7,187	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Construction (1902224)	1/4/2021	1/3/2025
Interlocal Agreement or Intergovernmental Agreement (1902224)	4/1/2021	5/31/2021



**Project Title:** Structural Inspection & Structural Improvements

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**Phase:** Miscellaneous**Phase Title:** Miscellaneous

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**Phase Budget:** Wastewater**Start Date:** 7/1/2020**Phase Status:****End Date:** 6/30/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** Yes**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** Structural Inspection & Structural Improvements

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2022	\$10,443	\$3,047	\$4,422	\$3,872	\$1,397	\$752	\$0	\$0	\$13,794

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$13,590,207	\$2,537,407	\$3,100,700	\$3,100,700	\$3,109,201	\$1,742,200	\$0	\$0	\$7,952,099	\$0

**Description of CIP Changes:**

This project was previously pushed back 2 fiscal years (in the 2019 version of the CIP) and then pulled forward in the 2020 version to increase CIP spend in Wastewater.

Updated cost- 2021

**Project Title:** Puritan Fenkell & Leib Site Improvements

**Project Status:** Project Execution - Construction

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Programs

**Class Lvl 3:** Programs

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



Poor Drainage at Leib

**Project Engineer/Manager:** Kashmira Patel

**Director:** Chris Nastally

**Managing Dept.:** CSO

**Date Original Business Case Prepared:** 7/27/2016

**Year Project Added to CIP:** 2017

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** Wayne

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

There is an existing site drainage at both of these facilities creating standing water on top of basin. There is no lighting at the outfall at PF, which is needed for operation at nighttime during an event. The existing sidewalks at both of these facilities are damaged and need replacement. The perimeter fencing at PF is damaged at various spots and there is no fence at the outfall area to secure the facility from outsiders. At Leib, the existing ornamental fence at the entrance is damaged and need replacement.

**Scope of Work/Project Alternatives:**

The scope of work includes but not limited to creating positive drainage, installation of trench drains as well as replacement of existing side walks at both facilities. Additionally, at PF, the scope includes installation of pathway and lighting at outfall, perimeter fence replacement, etc. At Leib, the scope also includes the replacement of ornamental fence, and brick pavers, etc.

**Other Important Info:**

N/A

**Primary Driver:** 1 - Condition

**Driver Explanation:**

Creating positive drainage at both of these facilities to eliminate possible condensation and infiltration inside the basin.

**Project Title:** Puritan Fenkell & Leib Site Improvements

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**Scoring****Project Manager Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Risk Committee Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Project Title:** Puritan Fenkell & Leib Site Improvements

**Phase:** GLWA Salaries

**Phase Title:** General - GLWA Salaries

<b>Phase Budget:</b> Wastewater	<b>Start Date:</b> 11/1/2018
<b>Phase Status:</b> Project Execution	<b>End Date:</b> 11/30/2021
<b>Cost Allocation:</b> CSO 83/17	<b>Fund:</b> N/A - Not Applicable
<b>Funding Source:</b> Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b> No
	<b>Tot. Federal Loan Amount:</b> \$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 5	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$76	\$27	\$27	\$48	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	11/1/2018	11/30/2021
Capital Delivery Salary	11/1/2018	11/30/2021
Contractual Professional Services	11/1/2018	11/30/2021
Other Capital Improvement Costs	11/1/2018	11/30/2021
Capitalized Interest	11/1/2018	11/30/2021

**Project Title:** Puritan Fenkell & Leib Site Improvements

**Phase:** Design-Build # 1 (1803809, 1902040)

**Phase Title:** 260615 - Construction of Site Improvements to Leib and Puritan Fenkell

<b>Phase Budget:</b> Wastewater	<b>Start Date:</b> 11/1/2018
<b>Phase Status:</b> Project Execution	<b>End Date:</b> 11/30/2021
<b>Cost Allocation:</b> CSO 83/17	<b>Fund:</b> N/A - Not Applicable
<b>Funding Source:</b> Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b> Yes
<b>Tot. Federal Loan Amount:</b> \$0.00	

**Phase Comments/Description:**

Constructing site improvements to Leib SDF and Puritan Fenkell facilities for drainage, site lighting, and sidewalks.

<b>Cost Est. Class:</b> Class 1	<b>Cost Est. Source:</b> Construction Bid
<b>Cost Est. Date:</b> 12/20/2019	<b>Cost Est. Prepared By:</b> DMC

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22
<b>Design-Build # 1 (1803809, 1902040)</b>	\$682	\$354	\$354	\$327

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (1803809)	11/1/2018	6/30/2020
Construction (1902040)	12/20/2019	11/30/2021

**Project Title:** Puritan Fenkell & Leib Site Improvements

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**Phase:** Miscellaneous**Phase Title:** Miscellaneous

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**Phase Budget:** Wastewater**Start Date:** 7/1/2020**Phase Status:****End Date:** 6/30/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** Yes**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** Puritan Fenkell & Leib Site Improvements

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>5 Year Total</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>Total</b>
2022	\$199	\$492	\$199	\$0	\$0	\$0	\$0	\$0	\$801

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<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>5 Year Total</b>	<b>FY28+</b>
\$759,306	\$382,407	\$376,900	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Description of CIP Changes:**

Updated cost and schedule - 06/21.



**Project Title:** Baby Creek Towards Treatment Sewer Improvements

**Project Status:** Closed

**CIP Type:** Program

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Programs

**Class Lvl 3:** Programs

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



Installed Bracket

**Project Engineer/Manager:** Matthew Krieger

**Director:** Chris Nastally

**Managing Dept.:** CSO

**Date Original Business Case Prepared:** 7/27/2016

**Year Project Added to CIP:** 2017

**CIP Budget:** Wastewater

**Project Jurisdiction:** Multiple Counties

**Lookup Location:** Baby Creek

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

The West End Sewer inside the Baby Creek CSO Effluent Channel is supported by concrete anchors and support wedges.

**Scope of Work/Project Alternatives:**

These supports have become dislodged or eroded and need repair and replacement with improved anchoring devices. Without repair the sewer pipe will have inadequate support and may fail. The improved anchor devices are expected to extend the life of the sewer beyond 20 years. The project seeks to refurbish pipe support anchors and wedges.

**Other Important Info:**

N/A

**Primary Driver:** 5 - Public Health and Safety

**Driver Explanation:**

Sewer supports have become dislodged or eroded and need repair and replacement with improved anchoring devices. Without repair the sewer pipe will have inadequate support and may fail. The improved anchor devices are expected to extend the life of the sewer beyond 20 years.

**Project Title:** Baby Creek Towards Treatment Sewer Improvements

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**Scoring****Project Manager Weighted Score:** 20.00

Criteria Name	Score	Comment
Condition	1	Scores carried over from previous year
Performance (Service Level/Reliability)	1	Scores carried over from previous year
Regulatory (Environmental/Legal)	1	Scores carried over from previous year
Operations and Maintenance	1	Scores carried over from previous year
Health and Safety	1	Scores carried over from previous year
Public Benefit	1	Scores carried over from previous year
Financial	1	Scores carried over from previous year
Efficiency and Innovation	1	Scores carried over from previous year

**Risk Committee Weighted Score:** 20.00

Criteria Name	Score	Comment
Condition	1	Scores carried over from previous year
Performance (Service Level/Reliability)	1	Scores carried over from previous year
Regulatory (Environmental/Legal)	1	Scores carried over from previous year
Operations and Maintenance	1	Scores carried over from previous year
Health and Safety	1	Scores carried over from previous year
Public Benefit	1	Scores carried over from previous year
Financial	1	Scores carried over from previous year
Efficiency and Innovation	1	Scores carried over from previous year

**Project Title:** Baby Creek Towards Treatment Sewer Improvements

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

**Phase Budget:** Wastewater

**Start Date:** 7/22/2019

**Phase Status:**
**End Date:** 11/30/2020

**Cost Allocation:**
**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**
**Cost Est. Class:**
**Cost Est. Source:**
**Cost Est. Date:**
**Cost Est. Prepared By:**
**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$29	\$29	\$29	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	4/16/2020	11/6/2020
Capital Delivery Salary	4/16/2020	11/6/2020
Professional Services (CS-272 - 72003A.02 / 72009A.01)	7/22/2019	11/30/2020
Contractual Professional Services	4/16/2020	11/6/2020
Other Capital Improvement Costs	4/16/2020	11/6/2020
Capitalized Interest	4/16/2020	11/6/2020

**Project Title:** Baby Creek Towards Treatment Sewer Improvements

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**Phase:** Design-Build # 1 (1803809, 1901836)**Phase Title:** Design-Build # 1 (1803809, 1901836)

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**Phase Budget:** Wastewater**Start Date:** 4/16/2020**Phase Status:****End Date:** 11/30/2020**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
<b>Design-Build # 1 (1803809, 1901836)</b>	\$740	\$740	\$740

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (1803809)	5/1/2020	11/30/2020
Construction (1901836)	4/16/2020	11/6/2020

**Project Title:** Baby Creek Towards Treatment Sewer Improvements

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**Phase:** Miscellaneous**Phase Title:** Miscellaneous

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**Phase Budget:** Wastewater**Start Date:** 7/1/2020**Phase Status:****End Date:** 6/30/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** Baby Creek Towards Treatment Sewer Improvements

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>5 Year Total</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>Total</b>
2022	\$0	\$116	\$0	\$0	\$0	\$0	\$0	\$0	\$783

**Reporting Period 33: Ending FY21 M12 Jun**

<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>5 Year Total</b>	<b>FY28+</b>
\$770,114	\$770,114	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Description of CIP Changes:**

7-2020 - Pulled out from program as project still in the program.

**Project Title:** St. Aubin Chemical Disinfection Improvements

**Project Status:** Active - Procurement - Design

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Programs

**Class Lvl 3:** Programs

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



Existing Screens

**Project Engineer/Manager:** Kashmira Patel

**Director:** Chris Nastally

**Managing Dept.:** CSO

**Date Original Business Case Prepared:** 7/27/2016

**Year Project Added to CIP:** 2017

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** Detroit

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

The St. Aubin CSO facility is nearly 20 years old. A study was conducted on the disinfection system and the screens were assessed by the manufacturer through a separate contract, and recommendations resulted in needed upgrade of these systems to restore operational control, flexibility, and reliability. The current pumping system for NaOCl is oversize (dose of 38 mg/L) when only 10 mg/l is required based on sampling study. The over-sized system makes it difficult to dial the pumps down on the low end ( where most events are) and properly disinfect (without over-dosing) the flow. As a result, operators tend to turn pumps on and off to meet permit limits. This is not the best for the equipment, water quality, or operations. Furthermore, the screens get blinded during the event, and because of that the rake mechanism trips out.

**Scope of Work/Project Alternatives:**

The scope of work includes but not limited to replacement of existing chem feed pumps with better pump technology to meet the need for this facility, modification on chem feed piping system and control, installation of overhead trolley for maintenance, relining the chem storage tanks to extend the life of existing tanks, replacing evaluating different screening technologies if applicable, if not, replacing control system and hydraulic power-pack of existing screens, installing new screen flushing sprayer system, replace existing HVAC with DDC system, upgrade and install new hatches at the facility and at the outfall, install new pre-fabricated storage building, etc.

**Other Important Info:**

Previous study was performed by Hazen and Sawyer. AECOM/DLZ is working to provide a study BOD and 20% Design documents.

**Primary Driver:** 2 - Performance

**Driver Explanation:**

The existing chem feed system is very complicated to adjust the desired dosing for the flow coming to this facility. Existing pumps are not capable to dose and meet the permit requirement at the same time for smaller size rain event. Also, during the rain event, screens get blinded very frequently and nullify the purpose of screening since the flow overpass the screens.

**Project Title:** St. Aubin Chemical Disinfection Improvements

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**Scoring****Project Manager Weighted Score:** 20.00

Criteria Name	Score	Comment
Condition	1	Scores carried over from previous year
Performance (Service Level/Reliability)	1	Scores carried over from previous year
Regulatory (Environmental/Legal)	1	Scores carried over from previous year
Operations and Maintenance	1	Scores carried over from previous year
Health and Safety	1	Scores carried over from previous year
Public Benefit	1	Scores carried over from previous year
Financial	1	Scores carried over from previous year
Efficiency and Innovation	1	Scores carried over from previous year

**Risk Committee Weighted Score:** 20.00

Criteria Name	Score	Comment
Condition	1	Scores carried over from previous year
Performance (Service Level/Reliability)	1	Scores carried over from previous year
Regulatory (Environmental/Legal)	1	Scores carried over from previous year
Operations and Maintenance	1	Scores carried over from previous year
Health and Safety	1	Scores carried over from previous year
Public Benefit	1	Scores carried over from previous year
Financial	1	Scores carried over from previous year
Efficiency and Innovation	1	Scores carried over from previous year



**Project Title:** St. Aubin Chemical Disinfection Improvements

**Phase:** GLWA Salaries

**Phase Title:** General - GLWA Salaries

<b>Phase Budget:</b> Wastewater	<b>Start Date:</b> 7/22/2019
<b>Phase Status:</b> Project Execution	<b>End Date:</b> 2/3/2026
<b>Cost Allocation:</b> CSO 83/17	<b>Fund:</b> N/A - Not Applicable
<b>Funding Source:</b> Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b> No
	<b>Tot. Federal Loan Amount:</b> \$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 5	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total
<b>GLWA Salaries</b>	\$736	\$367	\$367	\$73	\$73	\$74	\$73	\$74	\$295

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	9/15/2019	2/3/2026
Capital Delivery Salary	9/15/2019	2/3/2026
Professional Services (CS-272 - 72003A.01 / 72003B.01 / 72022A.01 / 72003F.01)	7/22/2019	6/30/2021

**Phase:** Study & Design & Construction Assistance # 1

**Phase Title:** 260617 - St. Aubin Screening & Chemical System Improvements (Design Services)

**Project Title:** St. Aubin Chemical Disinfection Improvements

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	9/15/2019
<b>Phase Status:</b>	Project Execution	<b>End Date:</b>	6/30/2026
<b>Cost Allocation:</b>	CSO 83/17	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

The St. Aubin SDF is nearly 20 years old. A study was conducted on the disinfection system and the screens were assessed by the manufacturer and recommendations resulted in upgrade of these systems to restore operational control, flexibility, and reliability. The current pumping system for NaOCl is over-sized (dose of 38 mg/L - when only 10 mg/L is required from sampling). The over-sized system makes it difficult to dial the pumps down on the low end (where most events are) and properly dose (without over-dosing) the water. As a result, operators tend to turn them on and off (plug flow), to meet permit limits. This is not the best for the equipment, water quality, or operations. Furthermore, the screens currently get blinded and then the rake mechanism trips out. There is a new control system for these screens offered by the manufacturer that would allow us to upgrade the controls of the screen and reduce it fully tripping out so that it will continue to rake parts of the screen during an event rather than tripping out and raking none of the scree. This phase endeavors to further evaluate this, design improvements, offer CA, and then bid out for construction. This phase will also provide construction assistance during construction (shop drawing review, as needed inspection, rfi response, attending progress meetings, etc.)

<b>Cost Est. Class:</b> Class 5	<b>Cost Est. Source:</b> CSO Manager
<b>Cost Est. Date:</b> 7/24/2019	<b>Cost Est. Prepared By:</b> CSO Manager

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total
<b>Study &amp; Design &amp; Construction Assistance # 1</b>	\$941	\$49	\$49	\$190	\$200	\$113	\$192	\$193	\$700

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (1803089)	9/15/2019	11/2/2020
Design/Engineering	2/1/2022	7/26/2024
Design/Engineering (CA)	7/27/2024	1/30/2026
Design-Build (NO DESIGN-BUILD)	7/1/2020	6/30/2026

**Project Title:** St. Aubin Chemical Disinfection Improvements

**Phase:** Construction (Build) # 1

**Phase Title:** 260617 - St. Aubin Screening & Chemical System Improvements (Construction Services)

<b>Phase Budget:</b> Wastewater	<b>Start Date:</b> 7/27/2024
<b>Phase Status:</b> Future Planned Start	<b>End Date:</b> 2/3/2026
<b>Cost Allocation:</b> CSO 83/17	<b>Fund:</b> N/A - Not Applicable
<b>Funding Source:</b> Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b> Yes
<b>Tot. Federal Loan Amount:</b> \$0.00	

**Phase Comments/Description:**

This phase will construct improvements designed for the chemical disinfection and screening systems at St. Aubin in the S/D/CA phase.

<b>Cost Est. Class:</b> Class 5	<b>Cost Est. Source:</b> CSO Manager
<b>Cost Est. Date:</b> 7/24/2019	<b>Cost Est. Prepared By:</b> CsO Manager

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY24	FY25	FY26	5 Year Total
<b>Construction (Build) # 1</b>	\$4,778	\$0	\$0	\$0	\$1,737	\$1,658	\$1,382	\$4,778

**Phase Dates**

Activity Name	Start Date	End Date
Construction	7/27/2024	2/3/2026

**Project Title:** St. Aubin Chemical Disinfection Improvements

**Phase:** Miscellaneous

**Phase Title:** Miscellaneous

**Phase Budget:** Wastewater

**Start Date:** 7/1/2020

**Phase Status:**

**End Date:** 6/30/2021

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** St. Aubin Chemical Disinfection Improvements

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>5 Year Total</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>Total</b>
2022	\$6,273	\$443	\$387	\$237	\$1,709	\$2,808	\$1,131	\$6,967

**Reporting Period 33: Ending FY21 M12 Jun**

<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>5 Year Total</b>
\$6,455,952	\$417,052	\$264,100	\$274,800	\$1,924,999	\$1,925,000	\$1,650,000	\$5,774,799

**Description of CIP Changes:**

2019-08 - added to the CIP.

2020-07 - Updated from last year (scope, cost, schedule)

Updated cost and schedule - 06/21.

**Project Title:** Oakwood HVAC Project

**Project Status:** Project Execution - Construction

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Programs

**Class Lvl 3:** Programs

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



Coroded building crane from failed HVAC system

**Project Engineer/Manager:** Chris Nastally

**Director:** Chris Nastally

**Managing Dept.:** CSO

**Date Original Business Case Prepared:** 7/27/2016

**Year Project Added to CIP:** 2017

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** Oakwood CSO Facility

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

Heavy corrosion and the gas detection system in the sanitary pump room is constantly going off causing operators to leave the overhead door open to keep the space ventilated and safe to enter. As a result of this, the door is left open nearly year round. HVAC system pulls gases from the sewer as currently operated. The wet-well supply fans have failed functionally and this is also resulting in heavy corrosion in the sanitary pump room.

**Scope of Work/Project Alternatives:**

The Odor Control unit intake will be reconfigured, various supply and exhaust fans will be replaced, access for the odor control units will be made for all three units to facilitate proper maintenance. The crane and building structural steel will be assessed and re-coated to ensure proper life.

**Other Important Info:**

This project design is under way by Hazen.

**Primary Driver:** 1 - Condition

**Driver Explanation:**

The HVAC system had functionally failed to perform. This is resulting in cascading failures of other building systems (i.e. pipes freezing because doors are left open, structural steel corroding, gas system failing, etc.).

**Project Title:** Oakwood HVAC Project

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**Scoring****Project Manager Weighted Score:** 20.00

Criteria Name	Score	Comment
Condition	1	Scores carried over from previous year
Performance (Service Level/Reliability)	1	Scores carried over from previous year
Regulatory (Environmental/Legal)	1	Scores carried over from previous year
Operations and Maintenance	1	Scores carried over from previous year
Health and Safety	1	Scores carried over from previous year
Public Benefit	1	Scores carried over from previous year
Financial	1	Scores carried over from previous year
Efficiency and Innovation	1	Scores carried over from previous year

**Risk Committee Weighted Score:** 20.00

Criteria Name	Score	Comment
Condition	1	Scores carried over from previous year
Performance (Service Level/Reliability)	1	Scores carried over from previous year
Regulatory (Environmental/Legal)	1	Scores carried over from previous year
Operations and Maintenance	1	Scores carried over from previous year
Health and Safety	1	Scores carried over from previous year
Public Benefit	1	Scores carried over from previous year
Financial	1	Scores carried over from previous year
Efficiency and Innovation	1	Scores carried over from previous year

**Project Title:** Oakwood HVAC Project

**Phase:** GLWA Salaries

**Phase Title:** General - GLWA Salaries

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	10/11/2019
<b>Phase Status:</b>	Project Execution	<b>End Date:</b>	9/29/2022
<b>Cost Allocation:</b>	CSO 83/17	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	No
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 5	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	5 Year Total
<b>GLWA Salaries</b>	\$383	\$141	\$141	\$134	\$107	\$107

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	6/29/2020	9/29/2022
Capital Delivery Salary	6/29/2020	9/29/2022
Professional Services (CS-272 - 72009A.04 / 72022A.02)	10/11/2019	9/2/2022
Contractual Professional Services	6/29/2020	9/29/2022
Other Capital Improvement Costs	6/29/2020	9/29/2022
Capitalized Interest	6/29/2020	9/29/2022

**Phase:** Study & Design & Construction Assistance # 1

**Phase Title:** 260618 - Oakwood CSO Facility HVAC Improvements Project (Design Services)



**Project Title:** Oakwood HVAC Project

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	6/29/2020
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	9/29/2022
<b>Cost Allocation:</b>	CSO 83/17	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

A study was completed in January of 2019 to evaluate the Sanitary Pumping and Storm Pumping systems at Oakwood CSO RTB. In the sanitary pump room, there is heavy corrosion and the gas detection system is constantly going off causing operators to leave the overhead door open to keep the space ventilated and safe to enter. As a result of this, the door is left open nearly year round. This practice led to freezing of the fire sprinkler system in January of 2019 and resulted in repair work to fix the sprinkler lines that were damaged. The study conducted in January of 2019 concluded that the ventilation system (supply and exhaust) for the wet-well and sanitary pumping room is inadequate. Currently the combination of exhaust fans and odor control system pull too much air from the wet-well (more than the supply fans put in) and have created a negative air pressure where we are constantly drawing air from the sewer (wetwell) into the sanitary pump room air space. This is causing the gas and corrosion issues and requires resolution. The HVAC exhaust/supply fans are currently entombed in a small area at the facility and are difficult to service or replace. This project will examine equipment access as well as a balanced air for the space. The fans also have some significant corrosion to them and may require complete replacement. This project will also cover construction assistance during construction for RFI's, submittal review, progress meetings, etc.

<b>Cost Est. Class:</b> Class 1	<b>Cost Est. Source:</b> Bid
<b>Cost Est. Date:</b> 6/29/2020	<b>Cost Est. Prepared By:</b> Hazen

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	5 Year Total
<b>Study &amp; Design &amp; Construction Assistance # 1</b>	\$457	\$229	\$229	\$222	\$6	\$6

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (1900318)	6/29/2020	9/29/2022
Design/Engineering (CA)	6/24/2021	6/29/2022
Design-Build	7/1/2020	6/24/2022

**Project Title:** Oakwood HVAC Project

**Phase:** Construction (Build) # 1

**Phase Title:** 260618 - Oakwood CSO Facility HVAC Improvements Project (Construction Services)

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	6/24/2021
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	9/23/2022
<b>Cost Allocation:</b>	CSO 83/17	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

This phase will construct improvements designed during the design services phase of this project.

<b>Cost Est. Class:</b> Class 4	<b>Cost Est. Source:</b> AECOM/DLZ
<b>Cost Est. Date:</b> 7/23/2019	<b>Cost Est. Prepared By:</b> Zach Alderman

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	5 Year Total
<b>Construction (Build) # 1</b>	\$5,249	\$0	\$0	\$4,865	\$384	\$384

**Phase Dates**

Activity Name	Start Date	End Date
Construction	6/24/2021	9/23/2022

**Project Title:** Oakwood HVAC Project

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**Phase:** Miscellaneous**Phase Title:** Miscellaneous

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**Phase Budget:** Wastewater**Start Date:** 7/1/2020**Phase Status:****End Date:** 6/30/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** Yes**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** Oakwood HVAC Project

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>5 Year Total</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>Total</b>
2022	\$3,252	\$640	\$3,236	\$17	\$3,967

**Reporting Period 33: Ending FY21 M12 Jun**

<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY22</b>	<b>FY23</b>	<b>5 Year Total</b>
\$6,091,125	\$370,525	\$5,222,600	\$498,000	\$498,000

**Description of CIP Changes:**

2019-08 - added to program

2020-07 - updated project schedule, cost, scope

2021 - Updated with contract info.

**Project Title:** Control System Upgrade - St Aubin, Lieb & Mile

**Project Status:** Active - Procurement - Design

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Programs

**Class Lvl 3:** Programs

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



Lieb CSO, PLC Panel

**Project Engineer/Manager:** Chris Wilson

**Director:** Chris Nastally

**Managing Dept.:** WW Design Eng

**Date Original Business Case Prepared:**  
 7/27/2016

**Year Project Added to CIP:** 2017

**CIP Budget:** Wastewater

**Project Jurisdiction:** Multiple Counties

**Lookup Location:** Seven Mile, Leib and St. Aubin  
 Screening and Disinfection Facilities

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

This project is being established to facilitate the design build improvements necessary to maintain the facilities which contribute to the CSO Control Program and compliance herewith.

**Scope of Work/Project Alternatives:**

The project will replace the Obsolete/End of Life Allen Bradley PLC5 control systems at 3 CSO Facilities (Leib, St. Aubin, 7-Mile) and upgrade critical Instrumentation. New Controllers, HMI, network components and controls system integration. Implementation of high-performance graphics and advance alarm management and advanced process control.

**Other Important Info:**

The intent of this project is to perform field investigation, replace, design, demo, furnish, install and start-up a complete Control system, networks, replacement of all field devices at the above facilities that are outlined within the project contract documents.

**Primary Driver:** 1 - Condition

**Driver Explanation:**

The PLC system has exceeded its useful life.

**Project Title:** Control System Upgrade - St Aubin, Lieb & Mile

### Scoring

**Project Manager Weighted Score:** 90.90

Criteria Name	Score	Comment
Condition	5	Asset has exceeded its design service life and requires excessive maintenance. Failure of this asset could result in diminished capacity. Assets present a cyber risk
Performance (Service Level/Reliability)	2	Meets all design requirements under normal conditions
Regulatory (Environmental/Legal)	4	Relatively high risk of causing Permit violations and Health risks to staff/public
Operations and Maintenance	3	Moderate level of O&M will keep mean times between failures frequent but tolerable.
Health and Safety	5	Canceling project would pose a significant public safety hazard. Some potential for significant regulatory violations
Public Benefit	1	Negligible additional revenues/savings
Financial	4	Project will likely result in avoidance of fines, potential litigation, emergency repairs or damage to public.
Efficiency and Innovation	2	Project improves O/M efficiencies.

**Risk Committee Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Project Title:** Control System Upgrade - St Aubin, Lieb & Mile

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**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

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**Phase Budget:** Wastewater

**Start Date:** 2/3/2020

**Phase Status:**

**End Date:** 1/26/2025

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total
<b>GLWA Salaries</b>	\$81	\$62	\$62	\$5	\$5	\$5	\$3	\$0	\$14

**Phase Dates**

**Project Title:** Control System Upgrade - St Aubin, Lieb & Mile

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Activity Name	Start Date	End Date
Capital Delivery Salary (5421)	6/22/2020	1/26/2025
Capital Delivery Salary (5404)	6/22/2020	1/26/2025
Capital Delivery Salary	6/22/2020	1/26/2025
Capital Delivery Salary (5421)	6/22/2020	1/26/2025
Capital Delivery Salary (5404)	6/22/2020	1/26/2025
Capital Delivery Salary	6/22/2020	1/26/2025
Professional Services (CS-272 - 72012A.01)	6/22/2020	1/26/2025
Professional Services (CS-272 - 72012A.01)	2/3/2020	1/26/2025
Professional Services	6/22/2020	1/26/2025
Contractual Professional Services	6/22/2020	1/26/2025
Other Capital Improvement Costs	6/22/2020	1/26/2025
Capitalized Interest	6/22/2020	1/26/2025



**Project Title:** Control System Upgrade - St Aubin, Lieb & Mile

**Phase:** Study & Design & Construction Assistance

**Phase Title:** Study & Design & Construction Assistance

**Phase Budget:** Wastewater

**Start Date:** 6/22/2020

**Phase Status:**

**End Date:** 1/26/2025

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total
<b>Study &amp; Design &amp; Construction Assistance</b>	\$7,553	\$0	\$0	\$2,111	\$2,111	\$2,116	\$1,213	\$0	\$5,441

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	6/22/2020	1/26/2025

**Project Title:** Control System Upgrade - St Aubin, Lieb & Mile

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY21	FY22	Total
2022	\$0	\$54	\$0	\$116

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total
\$7,635,012	\$62,766	\$2,116,289	\$2,116,286	\$2,122,084	\$1,217,588	\$0	\$5,455,958

**Description of CIP Changes:**

Moved over from CIP 251002.

**Project Title:** Baby Creek Roof Replacement

**Project Status:** Project Execution - Construction

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** CSO Facilities

**Class Lvl 3:** Baby Creek

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



- The previous installment on roof area 2 also failed to follow the required "step-down" installation method. As seen in the picture above, the shingle seams fall >4" from each other. This is a very common mistake found on

Improper shingle installation.

**Project Engineer/Manager:** Matthew Krieger

**Director:** Navid Mehram

**Managing Dept.:** CSO

**Date Original Business Case Prepared:** 9/2/2020

**Year Project Added to CIP:** 2021

**CIP Budget:** Wastewater

**Project Jurisdiction:** Wayne County - Outside Detroit

**Lookup Location:** Baby Creek

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

The Baby Creek roof leaks on electrical equipment when it rains. The laps in the shingles are sometimes as little as 2". The leaking roof over time has caused the substrate to rot and require replacement. Approximately 1/3 of the roof was previously replaced in 2017. The new portion of roof is sufficient. The remaining 2/3's of the roof is exhibiting failure per a roof inspection conducted by GLWA roofing contractor.

**Scope of Work/Project Alternatives:**

Replace the 2/3's of Baby Creek roof with matching asphalt shingles.

**Other Important Info:**

N/A

**Primary Driver:** 1 - Condition

**Driver Explanation:**

Roof shingle seams are too close allowing infiltration of water through the shingles into the substrate and eventually into the rooms below the roof.

**Project Title:** Baby Creek Roof Replacement

**Scoring**
**Project Manager Weighted Score:** 82.80

Criteria Name	Score	Comment
Condition	5	The Baby Creek roof leaks on electrical equipment when it rains.
Performance (Service Level/Reliability)	5	The Baby Creek roof leaks on electrical equipment when it rains
Regulatory (Environmental/Legal)	4	The Baby Creek roof leaks on electrical equipment when it rains, represent a personnel shock hazard
Operations and Maintenance	5	O&M Personnel are exposed to a hazard due to leaking roof, equipment is not in service
Health and Safety	4	Leaking roof represents a safety hazard to personnel and risks electrical power disruption to facility
Public Benefit	1	
Financial	5	Leaking roof will damage electrical equipment that does not currently need replacement
Efficiency and Innovation	2	New roof will have some added energy efficiency than current, though it is being replaced in kind

**Risk Committee Weighted Score:** 78.80

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	4	
Health and Safety	4	
Public Benefit	2	
Financial	4	
Efficiency and Innovation	2	

**Project Title:** Baby Creek Roof Replacement

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

**Phase Budget:** Wastewater

**Start Date:** 7/1/2020

**Phase Status:**

**End Date:** 8/31/2022

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	5 Year Total
<b>GLWA Salaries</b>	\$1	\$1	\$1	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2020	8/31/2022
Capital Delivery Salary	7/1/2020	8/31/2022
Contractual Professional Services	7/1/2020	8/31/2022
Other Capital Improvement Costs	7/1/2020	8/31/2022
Capitalized Interest	7/1/2020	8/31/2022

**Project Title:** Baby Creek Roof Replacement

**Phase:** TBD / Future Allocation / General Holding

**Phase Title:** TBD / Future Allocation / General Holding

**Phase Budget:**

**Start Date:** 7/1/2020

**Phase Status:**

**End Date:** 8/31/2022

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	5 Year Total
<b>TBD / Future Allocation / General Holding</b>	\$1,045	\$24	\$24	\$1,021	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (CS-299)	7/1/2020	6/30/2021
Design/Engineering (CA)	7/1/2021	8/31/2022
Construction	7/1/2021	8/31/2022

**Project Title:** Baby Creek Roof Replacement

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>FY21</b>	<b>Total</b>
2022	\$641	\$641

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<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY22</b>	<b>FY23</b>	<b>5 Year Total</b>
\$1,047,348	\$25,848	\$1,021,500	\$0	\$0

**Description of CIP Changes:**

2020-09 - Added to the CIP (previously budgeted under earlier version in Unallocated)

**Project Title:** Conner Creek Dike Improvements

**Project Status:** Project Execution - Construction

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** CSO Facilities

**Class Lvl 3:** Conner Creek

☒ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



Photo of the berm leaking into Clairpointe

**Project Engineer/Manager:** Chris Nastally

**Director:** Chris Nastally

**Managing Dept.:** CSO

**Date Original Business Case Prepared:** 6/23/2021

**Year Project Added to CIP:** 2021

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** Conner Creek

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

The Conner Creek berm was constructed as a part of the facilities construction in the early 2000's and was to serve as a landscaping element between Clairpointe Street and the Conner Creek Canal. When the facility was constructed the Great Lakes were at historic low levels and therefore it was never envisioned that this berm would be required to hold back the Detroit River (acting as a dike). Due to historically high Great Lakes levels, the now dike is exhibiting signs of seepage/failure and needs to be fixed before it experiences a complete failure which would result in flooding of the lower east side.

**Scope of Work/Project Alternatives:**

The work consists of removal of existing trees/vegetation from the berm, installing a sheet pile cutoff wall with a concrete cap, fencing, landscape restoration, and minor security improvements.

**Other Important Info:**

This project is funded through the GLWA TOES Contract with Wade Trim under Task 7T.

**Primary Driver:** 1 - Condition

**Driver Explanation:**

The berm is failing, and if it fails widespread flooding will occur.



**Project Title:** Conner Creek Dike Improvements

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**Scoring****Project Manager Weighted Score:** 97.40

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	5	
Operations and Maintenance	5	
Health and Safety	5	
Public Benefit	5	
Financial	5	
Efficiency and Innovation	1	

**Risk Committee Weighted Score:** 95.20

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	5	
Operations and Maintenance	4	
Health and Safety	5	
Public Benefit	5	
Financial	4	
Efficiency and Innovation	1	

**Project Title:** Conner Creek Dike Improvements

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**Phase:** GLWA Salaries**Phase Title:** GLWA Salaries

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**Phase Budget:** Wastewater**Start Date:** 6/16/2020**Phase Status:****End Date:** 7/1/2022**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	5 Year Total
<b>GLWA Salaries</b>	\$8	\$6	\$6	\$1	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	6/16/2020	7/1/2022
Capital Delivery Salary	6/16/2020	7/1/2022

**Project Title:** Conner Creek Dike Improvements

**Phase:** Design/Engineering (1900318 TOES)

**Phase Title:** Design/Engineering (1900318 TOES)

**Phase Budget:** Wastewater

**Start Date:** 6/16/2020

**Phase Status:**

**End Date:** 7/1/2022

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	5 Year Total
<b>Design/Engineering (1900318 TOES)</b>	\$664	\$277	\$277	\$386	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (1900318 / 2004724)	6/16/2020	7/1/2022

**Project Title:** Conner Creek Dike Improvements

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**Phase:** Construction**Phase Title:** Construction

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**Phase Budget:** Wastewater**Start Date:** 6/21/2021**Phase Status:****End Date:** 6/20/2022**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22
Construction	\$1,869	\$0	\$0	\$1,869

**Phase Dates**

Activity Name	Start Date	End Date
Construction	6/21/2021	6/20/2022

**Project Title:** Conner Creek Dike Improvements

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>
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**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY22	FY23	5 Year Total
\$2,541,533	\$284,034	\$2,257,500	\$0	\$0

**Description of CIP Changes:**

New to CIP

2021 - Added in costs from contractor and dates.

**Project Title:** CSO Emergency Generator Improvements

**Project Status:** Active - Procurement - Construction

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** CSO Facilities

**Class Lvl 3:** Multiple CSO Facilities

☒ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**


**Project Engineer/Manager:** Matthew Krieger

**Director:** Chris Nastally

**Managing Dept.:** CSO

**Date Original Business Case Prepared:** 3/25/2021

**Year Project Added to CIP:** 2021

**CIP Budget:** Wastewater

**Project Jurisdiction:** Multiple Counties

**Lookup Location:** Various CSO Facilities

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

The reliability of the CSO standby generators and automatic transfer switches is beginning to decline. During utility power outages when the standby generators are necessary, either the generators may not start automatically, or the automatic transfer switches may not transfer. Neither the generator control panels, nor automatic transfer switches report any status or alarm signals to the operators through the SCADA Ovation Control system. In many cases, CSO Facilities have ATS equipment which is original to construction and is now obsolete. Finding replacement parts, or servicing the existing equipment is no longer practical.

**Scope of Work/Project Alternatives:**

Under this project, the CSO facilities with standby generator systems will be upgraded to have a standardized, dedicated automatic transfer control system. This will include upgrades to the automatic transfer switches, upgrades to select generator control panels, and the addition of several alarm and status signals from both the generator control panels and the automatic transfer switch controllers, which will be monitored by the Ovation Control system. General Project Objectives are:

1. Replace obsolete PLC's or other controller styles with modern, standardized, microprocessor based automatic transfer controllers.
2. Reconfigure front panel of ATS panels not being fully replaced – standardize across all sites. Provide a remote HMI screen dedicated for the automatic transfer system.
3. Evaluate local generator panels for compatibility and reliability.
4. Create and standardize Ovation displays and include useful inputs (alarms, configuration, status).

**Other Important Info:**
**Primary Driver:** 2 - Performance

**Driver Explanation:**

Existing ATS equipment is obsolete due to age and is degrading, causing reliability issues. Modern controls are needed to deliver reliable back up power to our critical facilities.

**Project Title:** CSO Emergency Generator Improvements

**Scoring**
**Project Manager Weighted Score:** 93.60

Criteria Name	Score	Comment
Condition	5	Most PLC's and generator control equipment is original to the facility and is past the service life. At 7 Mile CSO, the PLC no longer functions.
Performance (Service Level/Reliability)	5	Except at Conner Creek, all PLC equipment is obsolete with replacement parts unavailable. Power outages have caused total loss of site power on multiple occasions due to lack of automatic generator functions.
Regulatory (Environmental/Legal)	5	Automatic Back up Generator Operation is mandated at our facilities which do not have dual sources of power. If the obsolete controls degrade further, we will not meet these requirements.
Operations and Maintenance	5	PLC components cannot be replaced due to obsolescence. New parts are not compatible with the old control system. At 7 Mile CSO the system is unable to run automatically, at other sites, control systems frequently do not function..
Health and Safety	3	Power failure on site will cause untreated discharges to occur and could lead to inability to pass water through the facility which could cause flooding.
Public Benefit	3	Power failure on site will cause untreated discharges to occur and could lead to inability to pass water through the facility which could cause flooding.
Financial	2	There is a cost savings in O&M requirements for newer, easier to service equipment, with more qualified service personnel available to perform maintenance, currently only one vendor is available for some equipment.
Efficiency and Innovation	2	Project will allow for easier O&M

**Risk Committee Weighted Score:** 77.50

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	4	
Health and Safety	3	
Public Benefit	4	
Financial	2	
Efficiency and Innovation	2	

**Project Title:** CSO Emergency Generator Improvements

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

**Phase Budget:** Wastewater

**Start Date:** 3/1/2021

**Phase Status:**

**End Date:** 2/28/2024

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	5 Year Total
<b>GLWA Salaries</b>	\$1	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	3/1/2021	2/28/2024
Capital Delivery Salary	3/1/2021	2/28/2024



**Project Title:** CSO Emergency Generator Improvements

**Phase:** Design/Engineering

**Phase Title:** Design/Engineering

**Phase Budget:** Wastewater

**Start Date:** 3/1/2021

**Phase Status:**

**End Date:** 2/28/2023

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	5 Year Total
<b>Design/Engine ering</b>	\$59	\$0	\$0	\$39	\$20	\$0	\$20

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	3/1/2021	2/28/2023

**Project Title:** CSO Emergency Generator Improvements

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**Phase:** Construction**Phase Title:** Construction

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**Phase Budget:** Wastewater**Start Date:** 9/30/2022**Phase Status:****End Date:** 2/28/2024**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY23	FY24	5 Year Total
Construction	\$1,999	\$0	\$0	\$1,199	\$799	\$1,999

**Phase Dates**

Activity Name	Start Date	End Date
Construction	9/30/2022	2/28/2024

**Project Title:** CSO Emergency Generator Improvements

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>
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**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY22	FY23	FY24	5 Year Total
\$2,060,893	\$893	\$40,000	\$1,220,000	\$800,000	\$2,020,000

**Description of CIP Changes:**

New Project Added FY 23 CIP Plan. AC 3/25/21

**Project Title:** CSO Baby Creek Screen Rehabilitation

**Project Status:** Active - Procurement - Construction

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** CSO Facilities

**Class Lvl 3:** Baby Creek

☒ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



**Project Engineer/Manager:** Brooke Ballard

**Director:** Chris Nastally

**Managing Dept.:** CSO

**Date Original Business Case Prepared:** 7/8/2021

**Year Project Added to CIP:** 2021

**CIP Budget:** Wastewater

**Project Jurisdiction:** Wayne County - Outside Detroit

**Lookup Location:** Dearborn

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

Based on the condition assessment conducted as a part of CS-299, the screens require rehabilitation to ensure long term viability.

**Scope of Work/Project Alternatives:**

The rehabilitation of Baby Creek Screens includes replacing/ repairing necessary parts to ensure system reliability and maintainability.

**Other Important Info:**

N/A

**Primary Driver:** 4 - O and M

**Driver Explanation:**

These improvements are intended to restore the condition of existing equipment.

**Project Title:** CSO Baby Creek Screen Rehabilitation

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**Scoring****Project Manager Weighted Score:** 94.40

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	5	
Operations and Maintenance	4	
Health and Safety	5	
Public Benefit	4	
Financial	5	
Efficiency and Innovation	1	

**Risk Committee Weighted Score:** 93.20

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	5	
Operations and Maintenance	4	
Health and Safety	5	
Public Benefit	4	
Financial	3	
Efficiency and Innovation	1	

**Project Title:** CSO Baby Creek Screen Rehabilitation

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**Project Title:** CSO Baby Creek Screen Rehabilitation

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>
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**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	5 Year Total
\$2,174,900	\$0	\$19,900	\$1,077,500	\$1,077,500	\$0	\$2,155,000

**Description of CIP Changes:**

New CIP added to FY 2023-2027 CIP Plan 08/6/2021 AC.

**Project Title:** Sewer System Infrastructure Improvements and Pumping Stations

**Project Status:** Project Execution - Design

**CIP Type:** Program

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Field Services

**Class Lvl 3:** Interceptor

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



Infrastructure

**Project Engineer/Manager:** Mini Panicker

**Director:** Todd King

**Managing Dept.:** SCC

**Date Original Business Case Prepared:**  
 7/28/2016

**Year Project Added to CIP:** 2017

**CIP Budget:** Wastewater

**Project Jurisdiction:** Multiple Counties

**Lookup Location:** CSO Outfalls

**Funds and Cost Center:** Wastewater - 5421-882301

**Problem Statement:**

VR-Gates, ISDs, and backwater gates are operational elements in the collection system that help in minimizing the untreated overflows and maximizing the flows to the WRRF and CSO control facilities. They have reached their life expectancy and need rehabilitation. Need to evaluate and install Backwater gates at the DRI Outfalls that currently do not have backwater gates to prevent river inflow into the collection system.

**Scope of Work/Project Alternatives:**

Evaluate the existing conditions of the VR-Gates, ISDs, Backwater Gates and Access Hatches, provide the necessary design, construction, and the Construction Assistance for their installation/replacement/rehabilitation.

**Other Important Info:**

Google map of VR-3 and VR-9 are included. VR-4, 5, 6, 10, 11 & 13 are also part of the project.

Project History: GLWA interceptors and sewers were constructed in the early 1900s. The hatches and access covers secure operations and maintenance access points throughout the system for items such as the backwater gates, ISD, and VR. The backwater gates, ISD, and VR are all critical elements that control and divert flows throughout the system. Most of them have reached their life expectancy and are hard to operate properly. These structures play vital roles in controlling the flow, increasing the storage capacity, and in meeting the NPDES permits.

Challenges: These are operational elements, so flow control may be a challenge.

**Primary Driver:** 1 - Condition

**Driver Explanation:**

These structures have reached their life expectancy and some of the operating technology is outdated.



**Project Title:** Sewer System Infrastructure Improvements and Pumping Stations

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**Scoring****Project Manager Weighted Score:** 78.90

Criteria Name	Score	Comment
Condition	4	Scores carried over from previous year
Performance (Service Level/Reliability)	4	Scores carried over from previous year
Regulatory (Environmental/Legal)	4	Scores carried over from previous year
Operations and Maintenance	4	Scores carried over from previous year
Health and Safety	4	Scores carried over from previous year
Public Benefit	4	Scores carried over from previous year
Financial	3	Scores carried over from previous year
Efficiency and Innovation	3	Scores carried over from previous year

**Risk Committee Weighted Score:** 67.10

Criteria Name	Score	Comment
Condition	4	Scores carried over from previous year
Performance (Service Level/Reliability)	4	Scores carried over from previous year
Regulatory (Environmental/Legal)	3	Scores carried over from previous year
Operations and Maintenance	5	Scores carried over from previous year
Health and Safety	3	Scores carried over from previous year
Public Benefit	2	Scores carried over from previous year
Financial	3	Scores carried over from previous year
Efficiency and Innovation	3	Scores carried over from previous year

**Project Title:** Sewer System Infrastructure Improvements and Pumping Stations

**Phase:** Capital Delivery Salary (was 222004)

**Phase Title:** Capital Delivery Salary (was 222004)

**Phase Budget:** Wastewater

**Start Date:** 7/1/2020

**Phase Status:**

**End Date:** 6/30/2028

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Capital Delivery Salary (was 222004)</b>	\$526	\$0	\$0	\$75	\$75	\$75	\$75	\$75	\$75	\$375	\$75

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2020	6/30/2028

**Project Title:** Sewer System Infrastructure Improvements and Pumping Stations

**Phase:** (1803709) (was 222004)

**Phase Title:** Design Construction Phase 1

<b>Phase Budget:</b> Water	<b>Start Date:</b> 7/1/2020
<b>Phase Status:</b> Project Execution	<b>End Date:</b> 6/30/2028
<b>Cost Allocation:</b> CTA	<b>Fund:</b> N/A - Not Applicable
<b>Funding Source:</b> Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b> Yes
	<b>Tot. Federal Loan Amount:</b> \$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b> Class 5	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>(1803709) (was 222004)</b>	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
TBD/Unallocated	7/1/2020	6/30/2028

**Project Title:** Sewer System Infrastructure Improvements and Pumping Stations

**Phase:** (1803709) (was 222004)

**Phase Title:** (1803709) (was 222004)

**Phase Budget:** Wastewater

**Start Date:** 7/1/2020

**Phase Status:**

**End Date:** 6/30/2025

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	5 Year Total
<b>(1803709) (was 222004)</b>	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Construction (3 Projects)	7/1/2020	6/30/2025

**Project Title:** Sewer System Infrastructure Improvements and Pumping Stations

**Phase:** TBD/Unallocated

**Phase Title:** TBD/Unallocated

**Phase Budget:** Wastewater

**Start Date:** 7/1/2025

**Phase Status:**

**End Date:** 9/15/2025

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
TBD/Unallocated	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
TBD - Future Allocation #3	7/1/2025	9/15/2025

**Project Title:** Sewer System Infrastructure Improvements and Pumping Stations

**Phase:** TBD/Unallocated

**Phase Title:** TBD/Unallocated

**Phase Budget:** Wastewater

**Start Date:** 7/1/2022

**Phase Status:**

**End Date:** 6/30/2023

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
TBD/Unallocated	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
TBD - Future Allocation #4	7/1/2022	6/30/2023

**Project Title:** Sewer System Infrastructure Improvements and Pumping Stations

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>5 Year Total</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>Total</b>
2022	\$30,810	\$1,403	\$3,661	\$9,051	\$9,021	\$7,234	\$1,844	\$1,844	\$35,901

**Reporting Period 33: Ending FY21 M12 Jun**

<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>5 Year Total</b>	<b>FY28+</b>
\$526,315	\$0	\$75,129	\$75,129	\$75,335	\$75,129	\$75,129	\$75,129	\$375,851	\$75,335

**Description of CIP Changes:**

Title Changed to "Sewer System Infrastructure and Pumping Stations Improvements" and moved to program 260700 in 2022 CIP update.

**Project Title:** Conveyance System Infrastructure Improvements

**Project Status:** Active - Procurement - Construction

**CIP Type:** Program

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Field Services

**Class Lvl 3:** Interceptor

☒ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



Infrastructure

**Project Engineer/Manager:** Mini Panicker

**Director:** Todd King

**Managing Dept.:** SCC

**Date Original Business Case Prepared:**  
 11/1/2017

**Year Project Added to CIP:** 2021

**CIP Budget:** Wastewater

**Project Jurisdiction:** Multiple Counties

**Lookup Location:** City of Detroit, Southfield, and others

**Funds and Cost Center:** Wastewater - 5421-882301

**Problem Statement:**

VR-Gates, ISDs, and backwater gates are operational elements in the collection system that help in minimizing the untreated overflows and maximizing the flows to the WRRF and CSO control facilities. They have reached their life expectancy and needs rehabilitation.

**Scope of Work/Project Alternatives:**

Assess the structure and functionality of the VR-Gates, ISDs, Regulators, Backwater Gates, and Access Hatches and provide the necessary Design, Construction, and Construction Assistance for their replacement/rehabilitation.

**Other Important Info:**

Rehabilitation will be in 3 different phases. Phase 1 will be the rehabilitation of the mechanical, structural and electrical equipment at 59 combined sewage outfall (CSO) sites. Majority of the work involves the replacement of timber backwater gates, modifications to the regulator opening and replacement of the regulator gates, and replacement of all instrumentation equipment. Phase 2 will be the rehabilitation of 14 ISDs and 2 DR facilities. These facilities are intended to store and release flow during times of high flow. Phase 3 will be the rehabilitation 13 VR gates. VR gates are non-self-contained slide gates that can be operated remotely and are intended to divert flow to and from various sewers throughout GLWA's system.

**Primary Driver:** 1 - Condition

**Driver Explanation:**

These structures have reached their life expectancy and some of the operating technology is outdated.



**Project Title:** Conveyance System Infrastructure Improvements

### Scoring

**Project Manager Weighted Score:** 96.00

Criteria Name	Score	Comment
Condition	5	19 of the DRI CSO outfalls do not have backwater gates to prevent river inflow . Many of the existing backwater gates are deteriorating and causing river infiltration
Performance (Service Level/Reliability)	5	Expanding 27 regulators will convey more sewage to DRI and to WRRF
Regulatory (Environmental/Legal)	5	Regulator chamber gate enlargements is expected to significantly reduce the overflow volume and frequency of untreated overflows to the Detroit River.
Operations and Maintenance	3	
Health and Safety	5	The regulator gate enlargements are expected to be especially effective for reducing untreated CSO for smaller storms.
Public Benefit	5	Untreated CSO volume discharged to the Detroit River will be less
Financial	3	Preventing river inflow/infiltration will reduce the treatment cost
Efficiency and Innovation	2	

**Risk Committee Weighted Score:** 60.10

Criteria Name	Score	Comment
Condition	3	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	3	
Health and Safety	3	
Public Benefit	4	
Financial	4	
Efficiency and Innovation	1	

**Project Title:** Conveyance System Infrastructure Improvements

**Phase:** Capital Delivery Salary (was 222004)

**Phase Title:** Capital Delivery Salary (was 222004)

**Phase Budget:** Wastewater

**Start Date:** 4/25/2020

**Phase Status:**
**End Date:** 2/28/2025

**Cost Allocation:**
**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**
**Cost Est. Class:**
**Cost Est. Source:**
**Cost Est. Date:**
**Cost Est. Prepared By:**
**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total
<b>Capital Delivery Salary (was 222004)</b>	\$21	\$16	\$16	\$1	\$1	\$1	\$1	\$0	\$3

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary - Will be 222004 Actuals through June 2020	4/25/2020	2/28/2025
Capital Delivery Salary - Will be 222004 Actuals through June 2020	4/25/2020	2/28/2025

**Project Title:** Conveyance System Infrastructure Improvements

**Phase:** (1803709) (was 222004)

**Phase Title:** (1803709) (was 222004)

**Phase Budget:** Wastewater

**Start Date:** 8/1/2021

**Phase Status:**

**End Date:** 12/31/2021

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	5 Year Total
<b>(1803709) (was 222004)</b>	\$7,140	\$1,367	\$1,367	\$5,772	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	8/1/2021	12/31/2021

**Project Title:** Conveyance System Infrastructure Improvements

**Phase:** Construction

**Phase Title:** Construction

**Phase Budget:** Wastewater

**Start Date:** 6/1/2022

**Phase Status:**

**End Date:** 2/28/2025

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total
Construction	\$38,808	\$0	\$0	\$0	\$15,637	\$12,599	\$7,108	\$3,463	\$38,808

**Phase Dates**

Activity Name	Start Date	End Date
Construction (Phase #1)	6/1/2022	2/28/2025

**Project Title:** Conveyance System Infrastructure Improvements

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**Phase:** Construction**Phase Title:** Construction

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**Phase Budget:** Wastewater**Start Date:** 10/1/2022**Phase Status:****End Date:** 9/26/2024**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY23	FY24	FY25	5 Year Total
Construction	\$2,660	\$0	\$0	\$0	\$1,471	\$1,189	\$2,660

**Phase Dates**

Activity Name	Start Date	End Date
Construction (Phase #2)	10/1/2022	9/26/2024

**Project Title:** Conveyance System Infrastructure Improvements

**Phase:** Construction

**Phase Title:** Construction

**Phase Budget:** Wastewater

**Start Date:** 10/28/2022

**Phase Status:**

**End Date:** 1/26/2025

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY23	FY24	FY25	FY26	5 Year Total
Construction	\$7,000	\$0	\$0	\$0	\$2,968	\$3,495	\$536	\$7,000

**Phase Dates**

Activity Name	Start Date	End Date
Construction (Phase #3)	10/28/2022	1/26/2025

**Project Title:** Conveyance System Infrastructure Improvements

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>5 Year Total</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>Total</b>
2022	\$2,761	\$1,356	\$1,356	\$1,356	\$48	\$4,586

**Reporting Period 33: Ending FY21 M12 Jun**

<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>5 Year Total</b>
\$55,630,839	\$1,384,239	\$5,773,788	\$15,638,605	\$17,040,722	\$11,793,485	\$4,000,000	\$48,472,812

**Description of CIP Changes:**

Originally this was CIP 222004.

**Project Title:** Pump Station Assets Updates

**Project Status:** Active - Pre-Procurement  
- Construction

**CIP Type:** Program

**Class Lvl 1:** Wastewater

**Class Lvl 2:** Programs

**Class Lvl 3:** Programs

☒ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



**Project Engineer/Manager:** Mini Panicker

**Director:** Biren Saparia

**Managing Dept.:** SCC

**Date Original Business Case Prepared:**  
11/24/2020

**Year Project Added to CIP:** 2022

**CIP Budget:** Wastewater

**Project Jurisdiction:** Multiple Counties

**Lookup Location:**

**Funds and Cost Center:** Wastewater - 5421-882301

**Problem Statement:**

Evaluation and upgrade of the Pumping Station elements are needed to improve the transportation of the wastewater to the WRRF.

**Scope of Work/Project Alternatives:**

On an as needed basis evaluate/upgrade/replace the Sewer Pump Station elements to keep up the collection system transport capacity.

**Other Important Info:**

**Primary Driver:** 1 - Condition

**Driver Explanation:**



**Project Title:** Pump Station Assets Updates

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**Scoring****Project Manager Weighted Score:** 57.50

Criteria Name	Score	Comment
Condition	3	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	4	
Health and Safety	2	
Public Benefit	2	
Financial	2	
Efficiency and Innovation	1	

**Risk Committee Weighted Score:** 59.60

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	3	
Health and Safety	3	
Public Benefit	4	
Financial	2	
Efficiency and Innovation	1	

**Project Title:** Pump Station Assets Updates

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**Phase:** GLWA Salaries**Phase Title:** GLWA Salaries

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**Phase Budget:** Wastewater**Start Date:** 9/1/2022**Phase Status:****End Date:** 6/30/2026**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
<b>GLWA Salaries</b>	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	9/1/2022	6/30/2026

**Project Title:** Pump Station Assets Updates

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**Phase:** (was 222004)**Phase Title:** (was 222004)

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**Phase Budget:** Wastewater**Start Date:** 9/1/2022**Phase Status:****End Date:** 6/30/2026**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY24	FY25	FY26	FY27	5 Year Total
(was 222004)	\$2,000	\$0	\$0	\$665	\$667	\$667	\$0	\$2,000

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	9/1/2022	10/31/2022
Construction	7/3/2023	6/30/2026

**Project Title:** Pump Station Assets Updates

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>FY21</b>	<b>Total</b>
2022	\$669	\$669

**Reporting Period 33: Ending FY21 M12 Jun**

<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>5 Year Total</b>
\$2,000,000	\$0	\$665,448	\$667,276	\$667,276	\$0	\$2,000,000

**Description of CIP Changes:**

**Project Title:** WRRF ROOF REPLACEMENT FOR MULTIPLE FACILITIES PROGRAM

**Project Status:** Project Execution - Design

**CIP Type:** Program

**Class Lvl 1:** Wastewater

**Class Lvl 2:** WRRF

**Class Lvl 3:** General Purpose

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



Complex I

**Project Engineer/Manager:** Chris Wilson

**Director:** Dan Alford

**Managing Dept.:** WW Design Eng

**Date Original Business Case Prepared:**  
 8/8/2016

**Year Project Added to CIP:** 2018

**CIP Budget:** Wastewater

**Project Jurisdiction:** Multiple Counties

**Lookup Location:** WRRF

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

Some of the roofs at GLWA WRRF facilities are near their end of useful life. The roofs help to protect the expensive equipment by preventing rainwater entering through roofs into the facilities.

**Scope of Work/Project Alternatives:**

Inspect the roofing system conditions and assess drainage conditions on all the GLWA wastewater related facility buildings. Document the roofing systems inspections by taking and submitting high-quality photographs, scaled drawings, sketches, and inspection notes to adequately describe the conditions and deficiencies of the roofing systems and their drainage facilities. Recommend the extent of the roofing repairs and replacements required. Document the roof for each building inspected on the project. Classify the roofs into three (3) main categories, such as, 1) Roofs that require complete replacement, 2) Roofs that only require repair, and 3) Roofs that require no action within the next 10 years. Develop a recommended implementation/planning schedule with budgetary costs tied to the schedule for roofing system repairs and replacements that GLWA should plan for over the next 10 years. Provide preventative care suggestions for the GLWA's roofing systems evaluated under this contract. Provide any OSHA compliance suggestions that may be applicable for the GLWA's roofing systems evaluated under this contract.

**Other Important Info:**

Challenges: Roof material testing for asbestos before demolition and flashing will be challenging to manage as low levels of asbestos are very common in the GLWA's old roof type systems.

Project History: Majority of GLWA WRRF facilities have Built-Up-Roof (BUR) membranes systems commonly referred to as "tar and gravel" roofs. The old Administration building, and the Newer Administration building have tar and gravel type of roof systems. The CSO RTB's and SDF's have metal and shingle type roofing systems. Most of the roofs are over 15 years old, with the remaining up to 30 years old. These roofing systems have been maintained through regular maintenance and repair or patch work performed to fix the leaking roof spots

**Primary Driver:** 1 - Condition

**Driver Explanation:**

GLWA wastewater roof systems are old, and some are near end of its useful life

**Project Title:** WRRF ROOF REPLACEMENT FOR MULTIPLE FACILITIES PROGRAM

**Scoring**
**Project Manager Weighted Score:** 59.80

Criteria Name	Score	Comment
Condition	4	Asset has exceeded its design service life and requires excessive maintenance. Failure of this asset could result in diminished capacity.
Performance (Service Level/Reliability)	4	Asset continues to show signs of deterioration. Roof leaks in many of the areas appear throughout the year.
Regulatory (Environmental/Legal)	2	Low risk of causing a permit violation
Operations and Maintenance	1	Moderate level of O/M will keep mean times between failures frequent low.
Health and Safety	1	Failure reasonably accepted to occur
Public Benefit	1	Low impact on City
Financial	3	Canceling project would have a moderate financial consequence
Efficiency and Innovation	1	Minimal effect on process efficiency

**Risk Committee Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Project Title:** WRRF ROOF REPLACEMENT FOR MULTIPLE FACILITIES PROGRAM

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

**Phase Budget:** Wastewater

**Start Date:** 3/9/2019

**Phase Status:**

**End Date:** 10/21/2025

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
<b>GLWA Salaries</b>	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	3/9/2019	10/21/2025
Capital Delivery Salary	3/9/2019	10/21/2025

**Project Title:** WRRF ROOF REPLACEMENT FOR MULTIPLE FACILITIES PROGRAM

**Phase:** Design/Engineering

**Phase Title:** Design/Engineering

**Phase Budget:** Wastewater

**Start Date:** 3/9/2019

**Phase Status:**

**End Date:** 10/21/2025

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total
<b>Design/Engineering</b>	\$600	\$0	\$0	\$0	\$199	\$200	\$200	\$0	\$600

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	3/9/2019	10/21/2025



**Project Title:** WRRF ROOF REPLACEMENT FOR MULTIPLE FACILITIES PROGRAM

**Phase:** Construction

**Phase Title:** Construction

**Phase Budget:** Wastewater

**Start Date:** 3/1/2023

**Phase Status:**

**End Date:** 10/21/2025

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total
Construction	\$4,400	\$0	\$0	\$0	\$1,691	\$1,690	\$1,017	\$0	\$4,400

**Phase Dates**

Activity Name	Start Date	End Date
Construction	3/1/2023	10/21/2025

**Project Title:** WRRF ROOF REPLACEMENT FOR MULTIPLE FACILITIES PROGRAM

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>
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**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total
\$5,000,001	\$0	\$0	\$1,891,192	\$1,891,192	\$1,217,617	\$0	\$5,000,001

**Description of CIP Changes:**

Moved project from CIP 331002.

Updated budget and schedule

**Project Title:** WRRF Facility Optimization Program

**Project Status:** Future Planned - Within 5 Year Plan

**CIP Type:** Program

**Class Lvl 1:** Wastewater

**Class Lvl 2:** WRRF

**Class Lvl 3:** General Purpose

☒ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



Administration Building

**Project Engineer/Manager:** Chris Wilson

**Director:** Dan Alford

**Managing Dept.:** WW Design Eng

**Date Original Business Case Prepared:**

**Year Project Added to CIP:** 2021

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** WRRF

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

The existing WRRF is a product of countless construction projects over nearly 90 years and consists of numerous process and other buildings with varying levels of use and practicality. As WRRF across the nation come out of the shadows and into the light of the public and elected officials it is critical to convey an image that reflects the pride and importance of the work that is done every day at this facility. As such, this project will work on the softer side of the facility, create a visitor center focusing on public education to entice the next generation of wastewater engineers, scientists and operators, and to beautify the image of the facility creating a more welcoming environment for the public and staff alike.

**Scope of Work/Project Alternatives:**

The work consists of extending the evaluation performed as a part of Master Planning to design and construct site modifications including but not limited to a new visitor center, demolition or repurposing of existing structures that are no longer used, consolidation and or reconfiguration of administration, operations and maintenance staff and spaces, vehicle and equipment storage spaces, shops, etc. The project also includes site modifications to include improved site circulation, parking and fencing, green infrastructure, improved landscaping, walking paths around the site and site features, including but not limited to educational signage and benches.

**Other Important Info:**

N/A

**Primary Driver:** 2 - Performance

**Driver Explanation:**

Improving plant operations by re-organizing workflow paths and space utilization.

**Project Title:** WRRF Facility Optimization Program

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**Scoring****Project Manager Weighted Score:** 75.10

Criteria Name	Score	Comment
Condition	4	Asset equipment remain the same, Condition remains the same
Performance (Service Level/Reliability)	3	Asset equipment remain the same, Performance remains the same
Regulatory (Environmental/Legal)	1	Asset equipment remain the same, Regulatory issues remain the same
Operations and Maintenance	3	Asset equipment remain the same, O&M risks remain the same
Health and Safety	4	Asset equipment remain the same, Public Health risks remain the same
Public Benefit	5	Asset equipment remain the same, Public Benefit risks remain the same
Financial	3	Asset equipment remain the same, Financial risks remain the same
Efficiency and Innovation	4	Asset equipment remain the same, Efficiency and Innovation remain the same

**Risk Committee Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Project Title:** WRRF Facility Optimization Program

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**Phase:** GLWA Salaries**Phase Title:** GLWA Salaries

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**Phase Budget:** Wastewater**Start Date:** 7/1/2022**Phase Status:****End Date:** 6/30/2023**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
<b>GLWA Salaries</b>	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2022	6/30/2023
Capital Delivery Salary	7/1/2022	6/30/2023

**Project Title:** WRRF Facility Optimization Program

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**Phase:** Design/Engineering**Phase Title:** Design/Engineering

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**Phase Budget:** Wastewater**Start Date:** 7/1/2022**Phase Status:****End Date:** 6/30/2023**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Design/Engineering	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (Unallocated)	7/1/2022	6/30/2023

**Project Title:** WRRF Facility Optimization Program

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**Phase:** Construction**Phase Title:** Construction

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**Phase Budget:** Wastewater**Start Date:** 7/1/2022**Phase Status:****End Date:** 6/30/2023**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY24	5 Year Total
Construction	\$428	\$0	\$0	\$428	\$428

**Phase Dates**

Activity Name	Start Date	End Date
Construction (Unallocated)	7/1/2022	6/30/2023

**Project Title:** WRRF Facility Optimization Program

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>
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**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY24	5 Year Total
\$428,948	\$0	\$428,948	\$428,948

**Description of CIP Changes:**

This is a newly added CIP program that includes multiple renovation projects within WRRF. This program replaces CIP 216010 AC 6/7/21



**Project Title:** Rehabilitation of HAZMAT Facility at WRRF

**Project Status:** Active - Procurement - Design

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** WRRF

**Class Lvl 3:** General Purpose

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**


**Project Engineer/Manager:** Chris Wilson

**Director:** Dan Alford

**Managing Dept.:** WW Design Eng

**Date Original Business Case Prepared:**
**Year Project Added to CIP:** 2022

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** WRRF

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

The HAZMAT Security Specialists at the Water Resource Recovery Facility (WRRF) provide rapid response for the GLWA operations, including site security and any emergency response relating to actual or potential leaks or spills of hazardous substances. There are approximately 3-4 specialists occupying the existing HAZMAT building daily, with a maximum of 5-6 specialists at certain times. The HAZMAT facility, which is located on the opposite side of Jefferson Road from the WRRF, is a single story, steel framed and concrete block building, with metal roofing and siding, and with a concrete slab on the ground floor. The building was built in the 1990's with the vehicle garage added later in 2003. The building is occupied 24 hours per day, seven days per week.

Recently, a condition assessment was completed on the HAZMAT Building. The assessment found that most of the building has exceeded its useful life and a complete rehabilitation of the building is required. This includes exterior metal siding, metal roofing, doors, windows etc. The following

**Scope of Work/Project Alternatives:**

Rehabilitation of the HAZMAT facilities at the WRRF. The scope of work will renovate the existing HAZMAT building to right size the facility to provide the following:

- accommodate the GLWA HAZMAT team.
- accommodate the parking of one (1) pick-up truck type vehicle, two (2) response vehicles and a response trailer with the bay doors facing the access road.
- demolish and construct new officer booth to accommodate one officer/guard

**Other Important Info:**

N/A

**Primary Driver:** 2 - Performance

**Driver Explanation:**

: Improving plant operations by re-organizing workflow paths and space utilization.

**Project Title:** Rehabilitation of HAZMAT Facility at WRRF

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scope is based on the findings and recommendations provided in the condition assessment report and the needs of the HAZMAT Security Specialists.

**Project Title:** Rehabilitation of HAZMAT Facility at WRRF**Scoring****Project Manager Weighted Score:** 51.40

Criteria Name	Score	Comment
Condition	4	Asset has less than 25% of its design life remaining
Performance (Service Level/Reliability)	2	Meets all design requirements under normal conditions
Regulatory (Environmental/Legal)	2	Low risk of causing a permit violation
Operations and Maintenance	3	Moderate level of O/M will keep mean times between failures frequent low.
Health and Safety	2	Low chance of failure occurring
Public Benefit	2	Low impact on City
Financial	2	Low financial impact
Efficiency and Innovation	2	Project improves process efficiencies

**Risk Committee Weighted Score:** 52.10

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	2	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	4	
Health and Safety	2	
Public Benefit	2	
Financial	2	
Efficiency and Innovation	2	

**Project Title:** Rehabilitation of HAZMAT Facility at WRRF

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**Phase:** GLWA Salaries**Phase Title:** GLWA Salaries

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**Phase Budget:** Wastewater**Start Date:** 7/1/2021**Phase Status:****End Date:** 7/1/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22
<b>GLWA Salaries</b>	\$5	\$5	\$5	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Professional Services	7/1/2021	7/1/2021

**Project Title:** Rehabilitation of HAZMAT Facility at WRRF

**Phase:** Design/Engineering

**Phase Title:** Design/Engineering

**Phase Budget:** Wastewater

**Start Date:** 7/1/2021

**Phase Status:**

**End Date:** 7/31/2021

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total
<b>Design/Engineering</b>	\$204	\$125	\$125	\$0	\$78	\$0	\$0	\$0	\$78

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	7/1/2021	7/31/2021

**Project Title:** Rehabilitation of HAZMAT Facility at WRRF

**Phase:** Construction

**Phase Title:** Construction

**Phase Budget:** Wastewater

**Start Date:** 7/1/2021

**Phase Status:**

**End Date:** 7/31/2021

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total
Construction	\$1,195	\$0	\$0	\$0	\$1,195	\$0	\$0	\$0	\$1,195

**Phase Dates**

Activity Name	Start Date	End Date
Construction	7/1/2021	7/31/2021

**Project Title:** Rehabilitation of HAZMAT Facility at WRRF**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)****CIP****Reporting Period 33: Ending FY21 M12 Jun**

<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>5 Year Total</b>
\$1,404,992	\$131,013	\$0	\$1,273,978	\$0	\$0	\$0	\$1,273,978

**Description of CIP Changes:**

This project is being reclassified into this program from the TOES contract 2000956 4T. AC 6/7/21

**Project Title:** WRRF 4th Floor Renovation

**Project Status:** Active - Procurement - Design

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** WRRF

**Class Lvl 3:** General Purpose

☒ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



New Administration Building

**Project Engineer/Manager:** Chris Wilson

**Director:** Dan Alford

**Managing Dept.:** WW Design Eng

**Date Original Business Case Prepared:**

**Year Project Added to CIP:** 2021

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** WRRF

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

: GLWA has recently renovated the WRRF 2nd floor Design Engineering area, 4th floor CIP/Asset Management area, and 2nd floor IWC area. Currently GLWA is renovating the 2nd floor Lab area so that Analytical lab team can relocate to WRRF. The Wastewater Master Plan 'non-process space programming task' for WRRF provided an overview of space needs, both current and future, to provide GLWA with the knowledge of space needs and a "roadmap" for building improvements utilizing holistic planning principles that will yield several benefits including:

- Increased efficiencies and space utilizations in the Admin Building complex, consolidating operations work flows and optimizing the use of existing space.
- Standardization of office and workstations sizes.
- Eliminate physical or perceived "barriers" between service units while offering opportunities for team members to associate with other team members; thus, promoting collaboration, understanding, and teamwork.
- Identify improvements to the work environment

**Scope of Work/Project Alternatives:**

GLWA plans to renovate a significant portion of the existing fourth floor of the New Administration Building, in order to house Engineering Design & CSO, Construction Engineering, and Local Asset Management groups in the space. The area of renovation is approximately 15,980 gross square feet and will be a combination of enclosed perimeter offices and conference rooms, coupled with furniture cubicles, collaboration space, and a break area.

**Other Important Info:**

N/A

**Primary Driver:** 2 - Performance

**Driver Explanation:**

Improving plant operations by re-organizing workflow paths and space utilization.



**Project Title:** WRRF 4th Floor Renovation

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that will benefit team members such as  
daylighting, use of interior color and artwork, etc.

**Project Title:** WRRF 4th Floor Renovation

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**Scoring****Project Manager Weighted Score:** 52.40

Criteria Name	Score	Comment
Condition	4	Asset has less than 25% of its design life remaining
Performance (Service Level/Reliability)	2	Meets all design requirements under normal conditions
Regulatory (Environmental/Legal)	2	Low risk of causing a permit violation
Operations and Maintenance	3	Moderate level of O/M will keep mean times between failures frequent low.
Health and Safety	2	Low chance of failure occurring
Public Benefit	2	Negligible additional revenues/savings
Financial	2	Low financial impact
Efficiency and Innovation	4	Significant effect on process efficiency

**Risk Committee Weighted Score:** 59.50

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	3	
Health and Safety	3	
Public Benefit	3	
Financial	2	
Efficiency and Innovation	4	

**Project Title:** WRRF 4th Floor Renovation

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**Phase:** Design/Engineering**Phase Title:** Design/Engineering

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**Phase Budget:** Wastewater**Start Date:** 7/1/2021**Phase Status:****End Date:** 7/31/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	5 Year Total
<b>Design/Engineering</b>	\$61	\$49	\$49	\$0	\$12	\$12

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	7/1/2021	7/31/2021

**Project Title:** WRRF 4th Floor Renovation

**Phase:** Construction

**Phase Title:** Construction

**Phase Budget:** Wastewater

**Start Date:** 7/1/2021

**Phase Status:**
**End Date:** 7/31/2021

**Cost Allocation:**
**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**
**Cost Est. Class:**
**Cost Est. Source:**
**Cost Est. Date:**
**Cost Est. Prepared By:**
**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	5 Year Total
Construction	\$2,658	\$0	\$0	\$0	\$2,658	\$2,658

**Phase Dates**

Activity Name	Start Date	End Date
Construction	7/1/2021	7/31/2021

**Project Title:** WRRF 4th Floor Renovation

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>
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**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY22	FY23	5 Year Total
\$2,720,565	\$49,160	\$0	\$2,671,406	\$2,671,406

**Description of CIP Changes:**

This project has been reclassified under the WRRF Facility Optimization Program 6/7/21.

**Project Title:** WRRF Front Entrance Rehabilitation

**Project Status:** Project Execution - Design

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** WRRF

**Class Lvl 3:** General Purpose

☒ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



WRRF Front Entrance

**Project Engineer/Manager:** Chris Wilson

**Director:** Dan Alford

**Managing Dept.:** WW Design Eng

**Date Original Business Case Prepared:**
**Year Project Added to CIP:** 2021

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** WRRF

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

The Great Lakes Water Authority's (GLWA) Water Resource Recovery Facility (WRRF) is the largest single-site wastewater treatment facility in the United States with nearly five hundred individuals that report to the facility including team members, visitors, and contractors. The main entry point to the facility is the entrance from Jefferson closes to the Rouge River bridge. This entrance handles majority of the traffic entering the plant. Team members and Contractors with badge access can go through the automated barrier gate arms along Jefferson and near the turnstiles for parking in the parking structure. Visitors without badge access have to find parking or wait at the barrier gate to be given access to park adjacent to the parking structure. Employees and visitors access the plant grounds through the security turnstiles located near the Guard House, which is manned 24 hours a day. The current traffic flow at the entrance of the facility is very cumbersome causing back up at the gates, providing relief for visitors prior to entering the site and more.

**Scope of Work/Project Alternatives:**

The project will re-design the Front Entrance at WRRF to accommodate the traffic flow at the entrance, provide visitor parking prior to the automated barrier gate arm, improvement to the turnstiles and the Guard House. The re-design of the entrance may require relocation of existing infrastructure to provide the best workflow for the entrance to the WRRF. The scope of work will include the following:

- Re-design the parking and traffic flow at the front entrance
- Minimize the pedestrian-vehicle conflicts at the north entrance to the parking garage
- Increase the parking space for visitors
- Visitor parking shall be prior to the automated barrier gate arm. This may require a relocation of the automated barrier gate arm.
- Identify parking for oversized vehicles
- Renovate the front entrance of WRRF to improve plant image and aesthetic.
- The renovation shall in no way compromise the security of the facility.
- Rehabilitate the Guard House. The Guard house may have to be relocated to accommodate the best workflow for the entrance to the facility.

**Other Important Info:**

N/A

**Primary Driver:** 2 - Performance

**Driver Explanation:**

Improving plant operations by re-organizing workflow paths and space utilization.

**Project Title:** WRRF Front Entrance Rehabilitation

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•If turnstiles or similar security barrier required for pedestrian entrance the area will require canopy.

**Project Title:** WRRF Front Entrance Rehabilitation

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**Scoring****Project Manager Weighted Score:** 52.40

Criteria Name	Score	Comment
Condition	4	Asset has less than 25% of its design life remaining
Performance (Service Level/Reliability)	2	Meets all design requirements under normal conditions
Regulatory (Environmental/Legal)	2	Low risk of causing a permit violation
Operations and Maintenance	3	Moderate level of O/M will keep mean times between failures frequent low.
Health and Safety	2	Low chance of failure occurring
Public Benefit	2	Low impact on City
Financial	2	Low financial impact
Efficiency and Innovation	4	Significant effect on process efficiency

**Risk Committee Weighted Score:** 52.40

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	2	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	3	
Health and Safety	2	
Public Benefit	2	
Financial	2	
Efficiency and Innovation	4	



**Project Title:** WRRF Front Entrance Rehabilitation

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

**Phase Budget:** Wastewater

**Start Date:** 7/1/2021

**Phase Status:**
**End Date:** 7/31/2021

**Cost Allocation:**
**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**
**Cost Est. Class:**
**Cost Est. Source:**
**Cost Est. Date:**
**Cost Est. Prepared By:**
**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
<b>GLWA Salaries</b>	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2021	7/31/2021
Capital Delivery Salary	7/1/2021	7/31/2021

**Project Title:** WRRF Front Entrance Rehabilitation

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**Phase:** Design/Engineering**Phase Title:** Design/Engineering

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**Phase Budget:** Wastewater**Start Date:** 7/1/2021**Phase Status:****End Date:** 7/31/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Design/Engineering	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	7/1/2021	7/31/2021

**Project Title:** WRRF Front Entrance Rehabilitation

**Phase:** Construction

**Phase Title:** Construction

**Phase Budget:** Wastewater

**Start Date:** 7/1/2021

**Phase Status:**
**End Date:** 7/31/2021

**Cost Allocation:**
**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**
**Cost Est. Class:**
**Cost Est. Source:**
**Cost Est. Date:**
**Cost Est. Prepared By:**
**Phase Total Expenses By FY (All figures are in \$1,000's)**

	<b>Total Costs</b>	<b>Actual Costs</b>	<b>Prior FYs</b>	<b>FY22</b>	<b>FY23</b>	<b>5 Year Total</b>
<b>Construction</b>	\$1,004	\$0	\$0	\$0	\$1,004	\$1,004

**Phase Dates**

<b>Activity Name</b>	<b>Start Date</b>	<b>End Date</b>
Construction	7/1/2021	7/31/2021
Construction Materials/Equipment Purchase	7/1/2021	7/31/2021

**Project Title:** WRRF Front Entrance Rehabilitation

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>
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**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY22	FY23	5 Year Total
\$1,004,587	\$0	\$0	\$1,004,587	\$1,004,587

**Description of CIP Changes:**

This project has been reclassified under the WRRF Facility Optimization Program work was initiated under TOES Contract 2001464-10T. AC 6/10/21

**Project Title:** Pilot CSO Netting Facility

**Project Status:** Future Planned - Within 5 Year Plan

**CIP Type:** Project

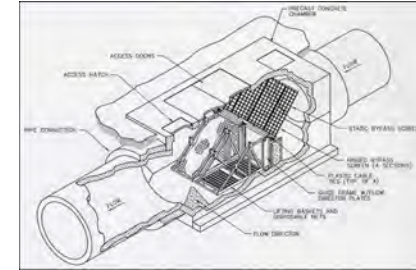
**Class Lvl 1:** Wastewater

**Class Lvl 2:** CSO Facilities

**Class Lvl 3:** Multiple CSO Facilities

☐ **Project New to CIP**

- ☐ **Innovation**
- ☒ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



Netting Facility

**Project Engineer/Manager:** Chris Nastally

**Director:** Chris Nastally

**Managing Dept.:** CSO

**Date Original Business Case Prepared:** 8/1/2019

**Year Project Added to CIP:** 2019

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** Detroit River - East Side  
Downtown east of Ralph C. Wilson Park.

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

The First Street CSO Outfall (B-023) has been identified in the NPDES Permit for the Priority Non-Core Compliance schedule. It is also the nearest and most frequently discharging outfall upstream of the proposed Ralph C Wilson waterfront park on the Detroit River. A pilot facility to demonstrate the application of CSO outfall nets is proposed at this location to keep the sanitary trash from discharging close to this beach, and also to help minimize impacts from fecal coliform bacteria contained in CSO discharge.

**Scope of Work/Project Alternatives:**

Inspect the two 10-ft by 10-foot box culverts that comprise this outfall and establish a location for installing the CSO nets, considering outfall structural condition, ease of access for net removal and replacement, and maintenance vehicle parking. Construct in-line netting facility under Convention Center Drive to the west of Cobo Convention Center. Construct access point for future Total Chlorine Residual monitoring to be installed in a second phase of this project. Provide electrical and instrumentation work associated with monitoring and controlling the netting facility.

**Other Important Info:**

GLWA staff conducted a field inspection in 2019 of CSO outfall netting facilities constructed in Cleveland in 2004. There are different types of CSO net installations, and GLWA believes that in-line nets provide for the most efficient operation and maintenance.

**Primary Driver:** 3 - Regulatory

**Driver Explanation:**

The NPDES permit requires GLWA to reduce untreated CSO discharge. This project is a low cost option to reduce sanitary trash and treat bacteria from untreated CSO discharges that may occur from the outfall, just upstream of the beach.

**Project Title:** Pilot CSO Netting Facility

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**Scoring****Project Manager Weighted Score:** 89.60

Criteria Name	Score	Comment
Condition	1	Scores carried over from previous year
Performance (Service Level/Reliability)	5	Scores carried over from previous year
Regulatory (Environmental/Legal)	5	Scores carried over from previous year
Operations and Maintenance	1	Scores carried over from previous year
Health and Safety	4	Scores carried over from previous year
Public Benefit	4	Scores carried over from previous year
Financial	1	Scores carried over from previous year
Efficiency and Innovation	3	Scores carried over from previous year

**Risk Committee Weighted Score:** 89.60

Criteria Name	Score	Comment
Condition	1	Scores carried over from previous year
Performance (Service Level/Reliability)	5	Scores carried over from previous year
Regulatory (Environmental/Legal)	5	Scores carried over from previous year
Operations and Maintenance	1	Scores carried over from previous year
Health and Safety	4	Scores carried over from previous year
Public Benefit	4	Scores carried over from previous year
Financial	1	Scores carried over from previous year
Efficiency and Innovation	3	Scores carried over from previous year

**Project Title:** Pilot CSO Netting Facility

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	7/1/2023
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	4/22/2028
<b>Cost Allocation:</b>	CSO 83/17	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b>	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$323	\$0	\$0	\$0	\$0	\$49	\$49	\$49	\$49	\$198	\$124

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2023	4/22/2028
Capital Delivery Salary	7/1/2023	4/22/2028
Professional Services (CS-166)	7/1/2023	4/22/2028
Contractual Professional Services	7/1/2023	4/22/2028
Other Capital Improvement Costs	7/1/2023	4/22/2028
Capitalized Interest	7/1/2023	4/22/2028

**Project Title:** Pilot CSO Netting Facility

**Phase:** Study & Design & Construction Assistance # 1

**Phase Title:** Study, Design, and Construction Assistance for Pilot Netting Facility

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	7/1/2023
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	4/22/2028
<b>Cost Allocation:</b>	CSO 83/17	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

This phase is to finalize the location, type, and configuration of the pilot netting facility, acquire easements/land, complete the basis of design and design documents, and then provide construction assistance during construction.

<b>Cost Est. Class:</b> Class 4	<b>Cost Est. Source:</b> CDM Smith (WWMP)
<b>Cost Est. Date:</b> 8/1/2019	<b>Cost Est. Prepared By:</b> Carl Johnson

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Study &amp; Design &amp; Construction Assistance # 1</b>	\$1,651	\$0	\$0	\$0	\$295	\$295	\$298	\$61	\$951	\$700

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	7/1/2023	4/22/2028
Design/Engineering (CA)	4/26/2026	4/22/2028



**Project Title:** Pilot CSO Netting Facility

**Phase:** Construction (Build) # 1

**Phase Title:** Construction

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	4/26/2026
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	4/22/2028
<b>Cost Allocation:</b>	CSO 83/17	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

Constructing the netting facility.

<b>Cost Est. Class:</b> Class 4	<b>Cost Est. Source:</b> CDM Smith
<b>Cost Est. Date:</b> 7/17/2020	<b>Cost Est. Prepared By:</b> Carl Johnson

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY25	FY26	FY27	5 Year Total	FY28+
<b>Construction (Build) # 1</b>	\$4,224	\$0	\$0	\$0	\$0	\$0	\$0	\$4,224

**Phase Dates**

Activity Name	Start Date	End Date
Construction	4/26/2026	4/22/2028

**Project Title:** Pilot CSO Netting Facility

**Phase:** Miscellaneous

**Phase Title:** Miscellaneous

**Phase Budget:** Wastewater

**Start Date:** 7/1/2020

**Phase Status:**
**End Date:** 6/30/2021

**Cost Allocation:**
**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**
**Cost Est. Class:**
**Cost Est. Source:**
**Cost Est. Date:**
**Cost Est. Prepared By:**
**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** Pilot CSO Netting Facility

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>5 Year Total</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>Total</b>
2021	\$6,535	\$20	\$86	\$1,604	\$318	\$4,507	\$1,234	\$0	\$7,769
2022	\$4,938	\$0	\$13	\$57	\$1,557	\$107	\$3,203	\$3,896	\$9,573

**Reporting Period 33: Ending FY21 M12 Jun**

<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>5 Year Total</b>	<b>FY28+</b>
\$6,199,186	\$235	\$0	\$0	\$345,100	\$345,100	\$348,400	\$111,000	\$1,149,600	\$5,049,350

**Description of CIP Changes:**

2019-08 - This is a new project to the CIP being driven by recommendations from the Wastewater Masterplan Project (2019).

2020-07 - Updating for schedule & costs (only including 1 Pilot Facility in the scope at this time). 4 Pilot facilities are proposed in WWMP.

2021 - pushed out 1 year to allow for better coordination with LTCSO plan.

**Project Title:** Meldrum Sewer Diversion and VR-15 Improvements

**Project Status:** Future Planned - Within 5 Year Plan

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** CSO Facilities

**Class Lvl 3:** Multiple CSO Facilities

☐ **Project New to CIP**

- ☐ **Innovation**
- ☒ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**


**Project Engineer/Manager:** Mini Panicker

**Director:** Biren Saparia

**Managing Dept.:** SCC

**Date Original Business Case Prepared:**  
 8/1/2019

**Year Project Added to CIP:** 2019

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** Sewers and Interceptors

**Funds and Cost Center:** Wastewater - 5421-882301

**Problem Statement:**

The Meldrum Sewer is an uncontrolled CSO that discharges through outfall B-07. Currently, this is an untreated CSO discharge. Untreated CSO discharges let debris from the sewer and bacteria make their way into fresh water bodies and are not good for public health or the environment. The NPDES permit requires control of this outfall to Michigan water quality standards. The Leib Screening and Disinfection Facility was designed with capacity to screen and disinfect the Meldrum Sewer CSO flow, but presently there is no way to get the flow from the Meldrum sewer to the Conant-Mt. Elliot sewer (and to Leib). This project is a high-level recommendation from the wastewater masterplan. An rfp will need to be developed that further develops the project scope necessary to achieve the desired outcome of connecting the Meldrum sewer to the Conant-Mt. Elliot sewer.

**Scope of Work/Project Alternatives:**

The scope of work involves connecting the Meldrum sewer to the Conant-Mt. Elliot Sewer with a diversion pipe that is 5 feet in diameter. New gates would be installed in the Meldrum sewer which direct flow through this diversion and into the Conant-Mt. Elliot sewer, which would then be processed through the Leib Screening and Disinfection Facility. These gates would allow dry weather flow to take it's normal route through the Meldrum sewer to the DRI, and would divert wet-weather to Leib SDF. This would reduce untreated CSO discharge, a requirement of the NPDES Permit.

**Other Important Info:**

Recommended in DWSD LTCSO Plan of 2008.

**Primary Driver:** 3 - Regulatory

**Driver Explanation:**

The NPDES permit requires GLWA to reduce untreated CSO discharge. This project is a low cost option to accomplish this for the B-07 outfall. In addition to regulator, this results in better improved public benefit from better water quality.

**Project Title:** Meldrum Sewer Diversion and VR-15 Improvements

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**Scoring****Project Manager Weighted Score:** 86.90

Criteria Name	Score	Comment
Condition	1	
Performance (Service Level/Reliability)	1	
Regulatory (Environmental/Legal)	5	
Operations and Maintenance	1	
Health and Safety	4	
Public Benefit	5	
Financial	1	
Efficiency and Innovation	4	

**Risk Committee Weighted Score:** 88.70

Criteria Name	Score	Comment
Condition	1	Scores carried over from previous year
Performance (Service Level/Reliability)	3	Scores carried over from previous year
Regulatory (Environmental/Legal)	5	Scores carried over from previous year
Operations and Maintenance	1	Scores carried over from previous year
Health and Safety	4	Scores carried over from previous year
Public Benefit	5	Scores carried over from previous year
Financial	1	Scores carried over from previous year
Efficiency and Innovation	4	Scores carried over from previous year

**Project Title:** Meldrum Sewer Diversion and VR-15 Improvements

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	7/1/2023
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	6/30/2029
<b>Cost Allocation:</b>	TBD	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b>	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$339	\$0	\$0	\$0	\$0	\$0	\$56	\$56	\$56	\$169	\$170

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2023	6/30/2029
Capital Delivery Salary	7/1/2023	6/30/2029
Contractual Professional Services	7/1/2023	6/30/2029
Other Capital Improvement Costs	7/1/2023	6/30/2029
Capitalized Interest	7/1/2023	6/30/2029

**Project Title:** Meldrum Sewer Diversion and VR-15 Improvements

**Phase:** Design & Construction Assistance # 1

**Phase Title:** Design and Construction Assistance for Meldrum Diversions

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	7/1/2023
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	6/30/2029
<b>Cost Allocation:</b>	TBD	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

Phase is to complete the design, carries through procurement of construction, and then through construction time period & project closeout. Includes designing the sewer connection, and assisting during construction

<b>Cost Est. Class:</b> Class 4	<b>Cost Est. Source:</b> CDM Smith WWMP
<b>Cost Est. Date:</b> 8/1/2019	<b>Cost Est. Prepared By:</b> Carl Johnson

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Design &amp; Construction Assistance # 1</b>	\$1,046	\$0	\$0	\$0	\$167	\$379	\$71	\$618	\$428

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	7/1/2023	6/30/2026
Design/Engineering (CA)	4/27/2025	6/30/2029

**Project Title:** Meldrum Sewer Diversion and VR-15 Improvements

**Phase:** Construction (Build) # 1

**Phase Title:** Construction of the Meldrum Diversion

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	4/27/2025
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	6/30/2029
<b>Cost Allocation:</b>	TBD	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

This phase is to execute the design project for the Meldrum Diversion to the Conant-Mt. Elliot sewer to divert untreated CSO discharge through the Leib SDF. This will result in untreated CSO discharge becoming "treated" CSO discharge. There is only recommendationsa bout scope schedule and budget from a masterplan perspective at this time.

<b>Cost Est. Class:</b> Class 4	<b>Cost Est. Source:</b> CDM Smith (WWMP)
<b>Cost Est. Date:</b> 8/1/2019	<b>Cost Est. Prepared By:</b> Carl Johnson

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY25	FY26	FY27	5 Year Total	FY28+
<b>Construction (Build) # 1</b>	\$4,453	\$0	\$0	\$0	\$0	\$1,290	\$1,290	\$3,162

**Phase Dates**

Activity Name	Start Date	End Date
Construction	4/27/2025	6/30/2029



**Project Title:** Meldrum Sewer Diversion and VR-15 Improvements

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY22	FY23	FY24	FY25	FY26	FY27	Total
2021	\$847	\$13	\$86	\$586	\$162	\$5,232	\$0	\$6,079
2022	\$2,891	\$9	\$57	\$282	\$567	\$1,975	\$2,288	\$5,840

**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$5,839,632	\$0	\$0	\$0	\$0	\$223,681	\$436,045	\$1,419,004	\$2,078,731	\$3,760,902

**Description of CIP Changes:**

2019-08 - This is a new project to the CIP being driven by recommendations from the Long Term CSO Control Plan from 2008 and further evaluation and recommendation from the Wastewater Masterplan Project (2019).

**Project Title:** Long Term CSO Control Plan

**Project Status:** Active - Procurement - Negotiation Phase - Design

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** CSO Facilities

**Class Lvl 3:** Multiple CSO Facilities

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**


**Project Engineer/Manager:** Sherri Gee

**Director:** Suzanne Coffey

**Managing Dept.:** Systems Planning

**Date Original Business Case Prepared:** 8/20/2019

**Year Project Added to CIP:** 2019

**CIP Budget:** Wastewater

**Project Jurisdiction:** Multiple Counties

**Lookup Location:** City of Detroit

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

The NPDES permit which governs CSO Discharges for GLWA requires GLWA to provide for prohibition, elimination, or adequate treatment of combined sewer discharges containing raw sewage. The current plans of 2008 and 2010 were approved by the EGLE (formerly MDEQ) and are the current plans of record. The new NPDES permit issued in July of 2019 opened the door for GLWA to refresh the Long Term Plan and submit to EGLE for review and approval by 11/15/2022. There are 56 total untreated outfalls operated by GLWA that require control in accordance with the NPDES permit language. The language allows for flexibility in terms of which outfalls GLWA shall address first, second & last, but nonetheless requires all of them to be addressed.

**Scope of Work/Project Alternatives:**

This project will be a predecessor project to executing a long term CSO control plan, as required by the NPDES permit. This project will include evaluation of the requirements and work done under the 2008 and 2010 current plans of record, evaluation of elements within the Wastewater Masterplan aimed at CSO Control, evaluation of affordability, evaluation and siting of specific projects to be executed, and evaluation and programming of recommended projects to address affordability. The RFP for this project is presently being drafted.

**Other Important Info:**

The wastewater masterplan, currently in draft format, has identified in it elements that are a part of the Long Term Plan, including a new storage conduit on the west-side for first flush capture, in-system storage dams, system diversions, and some netting facilities locations strategically selected. These will need to be evaluated and further fleshed out under this project and also evaluated against current system requirements, and former Long Term requirements and plans set forth in 2008 and 2010.

**Primary Driver:** 3 - Regulatory

**Driver Explanation:**

The NPDES permit requires GLWA to provide for prohibition, elimination, or adequate treatment of combined sewer discharges containing raw sewage.

**Project Title:** Long Term CSO Control Plan

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**Scoring****Project Manager Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Risk Committee Weighted Score:** 0.00

Criteria Name	Score	Comment
Condition	0	
Performance (Service Level/Reliability)	0	
Regulatory (Environmental/Legal)	0	
Operations and Maintenance	0	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

**Project Title:** Long Term CSO Control Plan

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salries

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	8/1/2019
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	6/30/2025
<b>Cost Allocation:</b>	CSO 83/17	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b>	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	5 Year Total
<b>GLWA Salaries</b>	\$7,700	\$2,129	\$2,129	\$3,105	\$2,462	\$1	\$1	\$2,465

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2020	6/30/2025
Capital Delivery Salary	7/1/2020	6/30/2025
Professional Services - NEW	7/1/2020	6/30/2025
Contractual Professional Services (CS-272 - 72010A.01/02/03, 72010B.01/02/03/04)	8/1/2019	5/19/2023
Contractual Professional Services (CS-200)	7/1/2021	7/31/2021
Contractual Professional Services (1904197)	7/1/2021	7/31/2021
Contractual Professional Services (U of M)	7/1/2021	7/31/2021
Other Capital Improvement Costs	7/1/2020	6/30/2025
Capitalized Interest	7/1/2020	6/30/2025

**Project Title:** Long Term CSO Control Plan

**Phase:** Design & Construction Assistance

**Phase Title:** Design & Construction Assistance

**Phase Budget:**

**Start Date:** 7/1/2020

**Phase Status:**

**End Date:** 6/30/2025

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	5 Year Total
<b>Design &amp; Construction Assistance</b>	\$548	\$0	\$0	\$56	\$56	\$283	\$151	\$491

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	7/1/2020	6/30/2025

**Project Title:** Long Term CSO Control Plan

**Phase:** Miscellaneous

**Phase Title:** Miscellaneous

**Phase Budget:** Wastewater

**Start Date:** 7/1/2020

**Phase Status:**

**End Date:** 6/30/2021

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** Long Term CSO Control Plan

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>5 Year Total</b>	<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>Total</b>
2021	\$5,726	\$68	\$2,796	\$2,220	\$710	\$0	\$0	\$5,794
2022	\$5,764	\$4	\$3,500	\$3,799	\$1,749	\$144	\$73	\$9,268

**Reporting Period 33: Ending FY21 M12 Jun**

<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>5 Year Total</b>
\$8,249,185	\$2,129,558	\$3,162,137	\$2,519,339	\$284,799	\$153,353	\$2,957,491

**Description of CIP Changes:**

2019 - This project is new to the CIP. I was formerly pulled out of the unallocated amount in the CSO Control Program 260600 of previous CIP version.

2020 - The GLWA CAFR group determined this would not be funded from CIP and subsequently removed it from CIP. This update is to remove it from the CIP as a "cancelled" project.

2020- The request was made to place this project back into the CIP with Sherri Gee as PM. AC

**Project Title:** Oakwood and Leib CSO Facilities Improvement Project

**Project Status:** Active - Procurement - Design

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** CSO Facilities

**Class Lvl 3:** Multiple CSO Facilities

☐ **Project New to CIP**

- ☐ **Innovation**
- ☒ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☒ **Predecessor Project(s)**



Oakwood / Leib Cover photo

**Project Engineer/Manager:** Chris Nastally

**Director:** Chris Nastally

**Managing Dept.:** CSO

**Date Original Business Case Prepared:**  
7/20/2020

**Year Project Added to CIP:** 2020

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** Oakwood/Leib

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

The Leib CSO Facility has been under utilized for the last 20 years. The WWMP is recommending a diversion to the facility which will increase utilization and close an untreated CSO outfall. To be prepared for this increased utilization, improvements to the facility are required. The chemical system is functionally failed and the screening system presents operational and maintenance difficulties (pilot facility with different types of screens requiring different maintenance and having different failure modes). The Oakwood Facility Construction was completed in 2012. Over the last 8 years, the facility has been under utilized. Proposed plans for the Oakwood-Northwest diversion to Oakwood coupled with a facility assessment require improvements to ensure the facility is prepared to handle flows over those historically observed over the last 8+ years.

**Scope of Work/Project Alternatives:**

To be ready for the Meldrum Diversion project, the following will be improved. Replacement of fine screens, replacement of the chemical feed system, improved automation for chemical dosing, improved access and maintenance of equipment, miscellaneous electrical/hvac and I&C improvements, a new site access drive to improve safety, as well as various safety improvements to facility hatches. The scope of work is currently being refined under CS-299 (CSO Facilities Assessment Project). At this time, the following improvements will be planned for: The manual screening in the pump station will be replaced with a mechanically raked bar screen to reduce pump failures (currently the manual screens blind and build up head in the storm well until they are manually cleaned, causing issues with bearing submersion of the storm pumps when they are not in operation). The disinfection system will receive improvements to the chemical delivery system to increase reliability and improve automatic operation, and the storage tanks will be retrofitted with manway accesses. The sampling system will be improved to allow operators flexibility for sampling at different levels to ensure TRC is adequate prior to discharge. The screening system

**Other Important Info:**

This is a predecessor project to the Meldrum diversion project and ideally should be constructed prior to completion of the Meldrum Diversion to allow use of that and testing of equipment installed as a part of that project. This project is intended to be completed plus/minus 12 months from the completion of the NWI diversion project. Given anticipated difficulties of that project, it is likely that this project will be completed much earlier than the NWI diversion. Ideally this project is to be completed before the NWI diversion to allow for proper testing/etc. needed when the NWI diversion is completed.

**Primary Driver:** 1 - Condition

**Driver Explanation:**

The chemical system is difficult to operate and maintain. In many instances only a few pumps are in service (and since the facility has been under utilized, this hasn't been an issue). The supporting system of the chemical pumps is near the end of it's 20-year design life and requires replacement. The screens are difficult to operate and there have been other innovations in the screen industry since these were installed that will allow better operation & maintenance. (Oakwood driver is O&M) Many issues



**Project Title:** Oakwood and Leib CSO Facilities Improvement Project

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will receive improvements to the solids handling conveyor, compactor, and grinder systems. Various actuated gates will receive new actuator and automation improvements. The Basin drain system will be improved to handle clogging of the smaller pipes which drain to the pump station. Various improvements for maintenance will be made, such as relocating valves or equipment to areas where they can be accessed for proper maintenance, or adding outlets to facilitate use of electrical equipment. Instrumentation for measuring flow and level will be replaced and programming in SCADA made to simplify automatic operation. The system operational schema will be revised to best handle the new flow source. Lastly, site drainage issues will be resolved to improve the flow of rain water away from the facility buildings.

observed during the CS-299 Condition Assessment project are to resolve operational and maintenance issues (such as cleaning screens, or having chemical pumps that operate in an automated fashion, or access to equipment to facilitate maintenance work).

**Project Title:** Oakwood and Leib CSO Facilities Improvement Project

**Scoring**
**Project Manager Weighted Score:** 79.40

Criteria Name	Score	Comment
Condition	4	FOR LEIB: asset has <25% of its design service life remaining. Chemical feed pumps and storage tanks are approaching their design life. The chemical tank has a leak that has damaged the containment coating. FOR OKW: The influent junction chamber isolation has failed and there is presently no way to isolate the sanitary wet wells as originally intended. The gravel drive around the site requires constant maintenance throughout the year (dozer and additional stone) because it develops large potholes due to frequent use to access the end of the basin (sampling, odor control, etc.). The storm pumps are failing due to high vibration, and a grease system that doesn't function properly. FOR BOTH: The chemical pumps are expensive to maintain / replace, and difficult to operate. Each facility is being updated to be able to accept addition flows due to Meldrum or NWI diversion plans as part of WWMP.
Performance (Service Level/Reliability)	4	FOR LEIB: Expected performance failures under normal condition, high risk of failure/doesn't meet future requirements. The chemical system and screening systems have high risk of failure given the age and difficulty operating/maintaining. Without improvement they will not meet future requirements (Meldrum diversion). FOR OKW: Generally meets design needs. There have been pump failures associated with the screens but haven't taken the facility out of service. The same goes for the disinfection equipment and other equipment.
Regulatory (Environmental/Legal)	3	Canceling project will result in non-compliance risk in 1-3 years (meldrum diversion project/ nwi diversion). FOR LEIB: If we add flows but screening and disinfection isn't functioning to it's fullest capacity we will have regulatory issues meeting requirements for screening & disinfection facility (TRC and or fecal violations). FOR OKW: If we add flows and the storm pumps aren't rehabilitated, they could fail to perform at or near the facilities flow capacity. Project is not part of a regulatory mandate but is directly related to future expected requirements. This project will allow GLWA customers to have the ability to achieve their contract capacities into the RWCS by providing capacity within the system (relief).
Operations and Maintenance	4	For both: High levels of O/M required to keep in service that only marginally ensure future proper operation. The chemical system (pumps, electrical, instruments, etc.) require replacement to ensure future proper operation capable of meeting increased flows to the facility. The screens at Leib require improvement to ensure they aren't failing when flows (and screening) are increased to the facility.
Health and Safety	4	For both: Failure of chemical feed system will not be catastrophic, but will cause violations of fecal coliform which is a risk to public health. For Leib: Failure of the screening system at Leib will also increase debris in the effluent flow which has an impact to the environment. Also the Leib entrance is very dangerous as it currently requires an operator to get out of their vehicle (parked on Mt. Elliot) to manually swipe badge, then return to vehicle to drive into site. During winter this is even more pronounced. FOR OKW: Canceling the project could have risk of significant public impacts. The Storm pumps not operating properly or to the facilities capacity could lead to flooded basements, or surcharged system and potential for SSO out river rouge outfalls.

**Project Title:** Oakwood and Leib CSO Facilities Improvement Project

Public Benefit	5	LEIB: Project is part of a strategic plan for right-sizing the system and eliminating an untreated CSO outfall by adding Meldrum diversion, and readying Leib SDF to receive flows higher than it typically has received over the last 18 years. OKW: This project is a part of aligning infrastructure with demands by serving as a predecessor project to the NWI diversion which will alleviate flow issues in the NWI and increase utilization of OKW. Making these improvements is necessary to ensuring the facility is in shape to handle flows above what it has seen in the last 8 years.
Financial	4	BOTH: Project will likely result in avoidance of fines, potential litigation, or damage to asset/public. We would be fined for failure of chemical feed system and fecal system violations, and public could be damaged if storm pumps do not operate properly at Oakwood, or screens do not operate properly at Leib.
Efficiency and Innovation	4	Significant positive impact on environmental responsibility & sustainability by reducing untreated CSOs.

**Risk Committee Weighted Score:** 79.40

Criteria Name	Score	Comment
Condition	4	Scores carried over from previous year for 274001
Performance (Service Level/Reliability)	4	Scores carried over from previous year for 274001
Regulatory (Environmental/Legal)	4	Scores carried over from previous year for 274001
Operations and Maintenance	4	Scores carried over from previous year for 274001
Health and Safety	3	Scores carried over from previous year for 274001
Public Benefit	5	Scores carried over from previous year for 274001
Financial	4	Scores carried over from previous year for 274001
Efficiency and Innovation	4	Scores carried over from previous year for 274001

**Project Title:** Oakwood and Leib CSO Facilities Improvement Project

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

**Phase Budget:** Wastewater

**Start Date:** 5/17/2022

**Phase Status:**

**End Date:** 9/11/2028

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$4	\$3	\$3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary (NEW to CIP 2023)	5/17/2022	9/11/2028
Capital Delivery Salary (NEW to CIP 2023)	5/17/2022	9/11/2028
Professional Services (CS-166)	5/17/2022	9/11/2028

**Project Title:** Oakwood and Leib CSO Facilities Improvement Project

**Phase:** Design/Engineering

**Phase Title:** Design/Engineering

**Phase Budget:** Wastewater

**Start Date:** 5/17/2022

**Phase Status:**

**End Date:** 8/31/2028

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Design/Engineering</b>	\$4,999	\$0	\$0	\$0	\$1,249	\$1,299	\$1,249	\$330	\$350	\$4,479	\$520

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering (NEW to CIP 2023)	5/17/2022	8/31/2028

**Project Title:** Oakwood and Leib CSO Facilities Improvement Project

**Phase:** Construction

**Phase Title:** Construction

**Phase Budget:** Wastewater

**Start Date:** 2/18/2025

**Phase Status:**

**End Date:** 9/11/2028

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY25	FY26	FY27	5 Year Total	FY28+
Construction	\$11,999	\$0	\$0	\$0	\$3,299	\$3,499	\$6,799	\$5,199

**Phase Dates**

Activity Name	Start Date	End Date
Construction (NEW to CIP 2023)	2/18/2025	9/11/2028

**Project Title:** Oakwood and Leib CSO Facilities Improvement Project

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>
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**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$17,003,564	\$3,564	\$0	\$1,250,000	\$1,300,000	\$1,250,000	\$3,630,000	\$3,850,000	\$11,280,000	\$5,720,000

**Description of CIP Changes:**

2020-07 - New to CIP (project was previously included under the "unallocated" portion of the CSO Program 260600 in 2019 CIP Update. It was in unallocated because the scope of the work wasn't known but is now better defined mid-CS-299 completion.

5-5-2021-Projects reclassified to project 270004 from 274001 and 278001 per PM requests. PM will update during the annual update process. AC

6/23/2021 - project updated.

**Project Title:** CSO Facility Safety Improvements and Building Rehabilitation

**Project Status:** Future Planned - Within 5 Year Plan

**CIP Type:** Program

**Class Lvl 1:** Wastewater

**Class Lvl 2:** CSO Facilities

**Class Lvl 3:** Multiple CSO Facilities

☒ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



**Project Engineer/Manager:** Brooke Ballard

**Director:** Navid Mehran

**Managing Dept.:** CSO

**Date Original Business Case Prepared:** 4/15/2021

**Year Project Added to CIP:** 2021

**CIP Budget:** Wastewater

**Project Jurisdiction:** Wayne County - Outside Detroit

**Lookup Location:** Various CSO Facilities

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

A safety inspection of GLWA's nine CSO facilities was conducted under CS-299. A list of safety-related issues observed and suggested corrective actions was generated. Most of the issues that require capital improvements are related to the lack of proper fall protection around the numerous hatch openings at each facility. An assessment of building-related issues was also conducted under CS-299. Building-related issues include damaged sealant around doors, windows, other wall penetrations, control/expansion joints; corrosion and hardware issues on doors; corrosion of structural steel surfaces, bollards, roof deck/framing; disbonded/damaged/stained tiles; water intrusion; and paint debonding at localized areas.

**Scope of Work/Project Alternatives:**

This project provides proper fall protection and address fall/trip hazards for all the nine CSO facilities with the addition of fall protection features such as temporary railings, nets, chains, portable davit, ladders with retractable safety posts, etc. This project also addresses the various building/architectural issues with doors, windows, room finishes, floors and ceiling coating systems, stairways, and corrosion of visible steel members for all nine CSO facilities. The goal of this rehabilitation is to prevent the issues from becoming significantly worse in the future. This project also includes installation of security fencing at Seven Mile CSO Facility. In addition, access doors to the Headworks will be provided at Seven Mile CSO Facility to provide emergency access.

**Other Important Info:**

The building rehabilitation work is bring combined with the safety issues because of the similarity of the design discipline and the similar type of contractor necessary for this job.

Primary Driver: Public Health and Safety

**Primary Driver:** 5 - Public Health and Safety

**Driver Explanation:**

Fall protection will be provided at all of the facilities, where needed



**Project Title:** CSO Facility Safety Improvements and Building Rehabilitation

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**Scoring****Project Manager Weighted Score:** 84.70

Criteria Name	Score	Comment
Condition	1	Based on average CS-299 condition assessment scores in 2020 for affected assets.
Performance (Service Level/Reliability)	2	Project has moderate to low positive impact on service levels and/or system reliability
Regulatory (Environmental/Legal)	2	Project will have a moderate to low impact on regulatory issues
Operations and Maintenance	1	Project will have low/negative impact on O&M; no critical assets involved; not expected to significantly impact any O&M issues
Health and Safety	5	Likely to address major hazard issues or concerns
Public Benefit	1	Project has no measurable public benefit
Financial	5	Based on total project cost of project
Efficiency and Innovation	1	Low impact on business process optimization; no time/cost saving

**Risk Committee Weighted Score:** 69.00

Criteria Name	Score	Comment
Condition	1	
Performance (Service Level/Reliability)	2	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	1	
Health and Safety	4	
Public Benefit	1	
Financial	4	
Efficiency and Innovation	1	

**Project Title:** CSO Facility Safety Improvements and Building Rehabilitation

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

**Phase Budget:** Wastewater

**Start Date:** 12/17/2022

**Phase Status:**

**End Date:** 8/20/2026

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
<b>GLWA Salaries</b>	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	12/17/2022	8/20/2026
Capital Delivery Salary	12/17/2022	8/20/2026

**Project Title:** CSO Facility Safety Improvements and Building Rehabilitation

**Phase:** Design/Engineering

**Phase Title:** Design/Engineering

**Phase Budget:** Wastewater

**Start Date:** 12/17/2022

**Phase Status:**

**End Date:** 2/19/2026

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Design/Engineering</b>	\$1,296	\$0	\$0	\$122	\$355	\$300	\$130	\$220	\$1,127	\$168

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	12/17/2022	2/19/2026

**Project Title:** CSO Facility Safety Improvements and Building Rehabilitation

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**Phase:** Construction**Phase Title:** Construction

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**Phase Budget:** Wastewater**Start Date:** 7/1/2021**Phase Status:****End Date:** 8/20/2026**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY25	FY26	FY27	5 Year Total	FY28+
Construction	\$5,185	\$0	\$0	\$0	\$1,300	\$2,200	\$3,500	\$1,685

**Phase Dates**

Activity Name	Start Date	End Date
Construction	12/19/2024	8/20/2026
Construction - Equipment/Material Purchase	7/1/2021	7/31/2021

**Project Title:** CSO Facility Safety Improvements and Building Rehabilitation

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>
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**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$6,481,200	\$0	\$122,200	\$355,500	\$300,000	\$1,430,000	\$2,420,000	\$4,627,700	\$1,853,500

**Description of CIP Changes:**

New CIP added to FY 2023-2027 Plan. AC 7/16/21

**Project Title:** Control System Upgrades at Baby Creek and Belle Isle CSO Facilities

**Project Status:** Future Planned - Within 5 Year Plan

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** CSO Facilities

**Class Lvl 3:** Multiple CSO Facilities

☒ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



**Project Engineer/Manager:** Matthew Krieger

**Director:** Chris Nastally

**Managing Dept.:** CSO

**Date Original Business Case Prepared:**

**Year Project Added to CIP:** 2021

**CIP Budget:** Wastewater

**Project Jurisdiction:** Wayne County - Outside Detroit

**Lookup Location:** Various CSO Facilities

**Funds and Cost Center:** Wastewater - 5421-892211

### Problem Statement:

There is a need to update the Ovation control system to the latest version and increase monitoring capabilities at Baby Creek and Belle Isle CSO Facilities. The lighting at these facilities is poor and non-existent in some locations, which makes for unsafe working conditions for the staff. At Baby Creek, there is a need for additional flow meters, level sensors, process cameras, and local control for the screens. At Belle Isle, there is a need to have the ability to control this facility from the Conner Creek facility to improve operational efficiency during CSO events. Also at Belle Isle, there is a need for process cameras and above-ground local control of valves in the basin valve vaults to improve worker safety.

### Scope of Work/Project Alternatives:

This project addresses O&M and safety issues at Baby Creek and Belle Isle to make them more reliable. This project updates the Ovation control system to the latest version which will enhance the overall performance of these facilities. Additional lighting will be provided at selected locations at both the facilities to improve worker safety. At Baby Creek, redundant level sensors will be removed and additional flow meters, level sensors, process cameras and local control for the screens will be provided. At Belle Isle, remote control operation of Belle Isle from Conner Creek Facility will be provided to improve operational efficiency during CSO events. In addition, at Belle Isle, remote control for valves in valve vaults will be provided with the control above-ground to improve safety.

### Other Important Info:

**Primary Driver:** 4 - O and M

### Driver Explanation:

Most of the upgrades will improve O&M capabilities and safety. The control system upgrade is required to maintain system reliability. Additional lighting will improve working conditions in the confined spaces.

**Project Title:** Control System Upgrades at Baby Creek and Belle Isle CSO Facilities

### Scoring

**Project Manager Weighted Score:** 71.90

Criteria Name	Score	Comment
Condition	1	Based on average CS-299 condition assessment scores in 2020 for affected assets.
Performance (Service Level/Reliability)	3	Cancelling project would potentially cause reliability issues.
Regulatory (Environmental/Legal)	2	Project will have a moderate to low impact on regulatory issues
Operations and Maintenance	4	Control system improvements should alleviate most ongoing O&M issues.
Health and Safety	4	Project will have significant positive impact on staff H&S with additional lighting and remote control of equipment.
Public Benefit	1	Project has no measurable public benefit
Financial	4	Based on total project cost of project
Efficiency and Innovation	1	Low impact on business process optimization; no time/cost saving

**Risk Committee Weighted Score:** 61.00

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	4	
Health and Safety	3	
Public Benefit	3	
Financial	4	
Efficiency and Innovation	1	

**Project Title:** Control System Upgrades at Baby Creek and Belle Isle CSO Facilities

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**Phase:** GLWA Salaries**Phase Title:** GLWA Salaries

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**Phase Budget:** Wastewater**Start Date:** 12/16/2022**Phase Status:****End Date:** 8/18/2026**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
<b>GLWA Salaries</b>	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	12/16/2022	8/18/2026
Capital Delivery Salary	12/16/2022	8/18/2026



**Project Title:** Control System Upgrades at Baby Creek and Belle Isle CSO Facilities

**Phase:** Design/Engineering

**Phase Title:** Design/Engineering

**Phase Budget:** Wastewater

**Start Date:** 12/16/2022

**Phase Status:**

**End Date:** 2/17/2026

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Design/Engineering</b>	\$502	\$0	\$0	\$93	\$134	\$134	\$45	\$45	\$451	\$51

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	12/16/2022	2/17/2026

**Project Title:** Control System Upgrades at Baby Creek and Belle Isle CSO Facilities

**Phase:** Construction

**Phase Title:** Construction

**Phase Budget:** Wastewater

**Start Date:** 7/1/2021

**Phase Status:**

**End Date:** 8/18/2026

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY25	FY26	FY27	5 Year Total	FY28+
Construction	\$1,413	\$0	\$0	\$0	\$450	\$450	\$900	\$513

**Phase Dates**

Activity Name	Start Date	End Date
Construction	12/18/2024	8/18/2026
Construction - Equipment/Material Purchase	7/1/2021	7/31/2021

**Project Title:** Control System Upgrades at Baby Creek and Belle Isle CSO Facilities

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>
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**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$1,915,600	\$0	\$93,200	\$134,000	\$134,000	\$495,000	\$495,000	\$1,351,200	\$564,400

**Description of CIP Changes:**

New CIP was added to Portal on 7/16/2021. AC

**Project Title:** Disinfection System Improvements at Baby Creek, Belle Isle, Conner Creek, and Puritan Fenkell CSO Facilities

**Project Status:** Future Planned - Within 5 Year Plan

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** CSO Facilities

**Class Lvl 3:** Multiple CSO Facilities

☒ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



**Project Engineer/Manager:** Kashmira Patel

**Director:** Chris Nastally

**Managing Dept.:** CSO

**Date Original Business Case Prepared:** 7/19/2021

**Year Project Added to CIP:** 2021

**CIP Budget:** Wastewater

**Project Jurisdiction:** Multiple Counties

**Lookup Location:** Wayne

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

The chemical feed pumps and systems at these facilities are expensive to maintain and there is a lack of automation of the feed system.

Furthermore, each facility has a different type of chemical pump, making O&M more difficult and site specific.

At Baby Creek, the floor in the Chemical Room is flat and the coating has been consumed by sodium hypochlorite spills.

**Scope of Work/Project Alternatives:**

This project replaces the chemical feed systems at each facility with standardized and automated feed systems. Other improvements include providing a sloped floor with corrosion resistant coating in the Baby Creek Chemical Room and installation of a ladder and railing system to access the top of the carbon vessel of the Belle Isle odor control system for carbon replacement.

**Other Important Info:**

None

**Primary Driver:** 4 - O and M

**Driver Explanation:**

Most of the improvements are O&M related, with a regulatory component. Effluent permit conditions are typically met at these facilities; however, chemical feed system improvements should allow the system to better control hypochlorite feed rates, thus improving ability to meet effluent total residual chlorine (TRC) goals set by EGLE, and possibly avoid addition of dechlorination.

**Project Title:** Disinfection System Improvements at Baby Creek, Belle Isle, Conner Creek, and Puritan Fenkell CSO Facilities

### Scoring

**Project Manager Weighted Score:** 57.90

Criteria Name	Score	Comment
Condition	1	Based on average CS-299 condition assessment scores in 2020 for affected assets.
Performance (Service Level/Reliability)	3	Cancelling project would result in chemical feed systems that would be near the end of their useful life and not reliable for current flows.
Regulatory (Environmental/Legal)	3	Chemical feed system improvements should provide an improved ability to meet effluent TRC goals.
Operations and Maintenance	4	Chemical feed system improvements and the other improvements in these projects should alleviate most ongoing O&M issues.
Health and Safety	2	Project has limited positive impact on staff/public H&S (ladder and railing system at Belle Isle odor control system should eliminate safety issues with replacement of carbon).
Public Benefit	1	Project has no measurable public benefit.
Financial	5	Based on total project cost of project
Efficiency and Innovation	2	Project improves O&M efficiencies

**Risk Committee Weighted Score:** 57.00

Criteria Name	Score	Comment
Condition	1	
Performance (Service Level/Reliability)	2	
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	4	
Health and Safety	2	
Public Benefit	1	
Financial	5	
Efficiency and Innovation	2	

**Project Title:** Disinfection System Improvements at Baby Creek, Belle Isle, Conner Creek, and Puritan Fenkell CSO Facilities

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**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

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**Phase Budget:** Wastewater

**Start Date:** 4/24/2025

**Phase Status:**

**End Date:** 4/27/2030

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
<b>GLWA Salaries</b>	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	4/24/2025	4/27/2030
Capital Delivery Salary	4/24/2025	4/27/2030

**Project Title:** Disinfection System Improvements at Baby Creek, Belle Isle, Conner Creek, and Puritan Fenkell CSO Facilities

**Phase:** Design/Engineering

**Phase Title:** Design/Engineering

**Phase Budget:** Wastewater

**Start Date:** 4/24/2025

**Phase Status:**

**End Date:** 10/26/2029

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY25	FY26	FY27	5 Year Total	FY28+
<b>Design/Engineering</b>	\$4,323	\$0	\$0	\$335	\$1,507	\$1,507	\$3,350	\$973

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	4/24/2025	10/26/2029

**Project Title:** Disinfection System Improvements at Baby Creek, Belle Isle, Conner Creek, and Puritan Fenkell CSO Facilities

**Phase:** Construction

**Phase Title:** Construction

**Phase Budget:** Wastewater

**Start Date:** 7/1/2021

**Phase Status:**

**End Date:** 4/27/2030

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	<b>Total Costs</b>	<b>Actual Costs</b>	<b>Prior FYs</b>	<b>FY28+</b>
<b>Construction</b>	\$3,893	\$0	\$0	\$3,893

**Phase Dates**

<b>Activity Name</b>	<b>Start Date</b>	<b>End Date</b>
Construction	10/26/2027	4/27/2030
Construction - Equipment/Material Purchase	7/1/2021	7/31/2021



**Project Title:** Disinfection System Improvements at Baby Creek, Belle Isle, Conner Creek, and Puritan Fenkell CSO Facilities

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>
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**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY25	FY26	FY27	5 Year Total	FY28+
\$8,216,300	\$0	\$335,000	\$1,507,500	\$1,507,500	\$3,350,000	\$4,866,300

**Description of CIP Changes:**

New CIP added to Portal 7/16/21. AC

**Project Title:** Flushing System Improvements at Conner Creek and St. Aubin CSO Facilities

**Project Status:** Future Planned - Within 5 Year Plan

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** CSO Facilities

**Class Lvl 3:** Multiple CSO Facilities

☒ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



**Project Engineer/Manager:** Matthew Krieger

**Director:** Chris Nastally

**Managing Dept.:** CSO

**Date Original Business Case Prepared:**

**Year Project Added to CIP:** 2021

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** Various CSO Facilities

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

At Conner Creek, a significant amount of solids accumulate in the influent area just upstream of the bar screens. The original flushing system was ineffective and is non-functional. Currently, GLWA staff use a bobcat to fill a small dumpster to remove some of the solids and need to rely on fire hoses to remove the rest - both of which are labor intensive, costly, and have safety-related concerns.

Also at Conner Creek, the flushing reservoirs in the basin require the use of potable water (after the initial flush that uses CSO water). Use of potable water to fill the flushing reservoirs requires a significant amount of potable water, which is both costly and time-consuming.

At St. Aubin, solids accumulate in the effluent conduit, as well as the chemical mixing channels, and the removal and cleaning of these settled solids is costly and has safety concerns.

**Scope of Work/Project Alternatives:**

This project provides improvements in the influent area of Conner Creek to allow for more efficient removal of accumulated solids and to make the entire influent area more accessible for bobcat maneuverability throughout the entire influent area.

This project also provides for river water as a source of flushing water in the basin, which will provide water savings and will significantly reduce the time to fill the reservoirs.

At St. Aubin, the project includes a new effluent conduit flushing system to allow for routine and automatic flushing of accumulated solids.

**Other Important Info:**

The Conner Creek flushing work is being combined with St. Aubin because of the similarity of the design and type of contractor necessary for this job.

**Primary Driver:** 4 - O and M

**Driver Explanation:**

This project will improve the ability to remove solids from the Conner Creek influent area and St. Aubin effluent conduit, thus reducing GLWA staff time inside these areas. The use of river water instead of potable water was found to be a better value in the CS-299 Facilities Assessment.

**Project Title:** Flushing System Improvements at Conner Creek and St. Aubin CSO Facilities

### Scoring

**Project Manager Weighted Score:** 73.50

Criteria Name	Score	Comment
Condition	1	Based on average CS-299 condition assessment scores in 2020 for affected assets.
Performance (Service Level/Reliability)	3	Cancelling project would potentially cause reliability issues.
Regulatory (Environmental/Legal)	2	Project will have a moderate to low impact on regulatory issues
Operations and Maintenance	4	Flushing system improvements should alleviate most ongoing O&M issues.
Health and Safety	4	Project will have significant positive impact on staff H&S because operators will not need to routinely enter the basin for flushing
Public Benefit	1	Project has no measurable public benefit
Financial	5	Based on total project cost of project
Efficiency and Innovation	3	Project will have a moderate positive impact on water savings; process efficiency for a more robust system and less O&M, and time and cost savings.

**Risk Committee Weighted Score:** 74.40

Criteria Name	Score	Comment
Condition	3	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	4	
Health and Safety	4	
Public Benefit	1	
Financial	5	
Efficiency and Innovation	2	

**Project Title:** Flushing System Improvements at Conner Creek and St. Aubin CSO Facilities

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

**Phase Budget:** Wastewater

**Start Date:** 4/25/2024

**Phase Status:**

**End Date:** 4/28/2029

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
<b>GLWA Salaries</b>	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	4/25/2024	4/28/2029
Capital Delivery Salary	4/25/2024	4/28/2029

**Project Title:** Flushing System Improvements at Conner Creek and St. Aubin CSO Facilities

**Phase:** Design/Engineering

**Phase Title:** Design/Engineering

**Phase Budget:** Wastewater

**Start Date:** 4/25/2024

**Phase Status:**

**End Date:** 10/27/2028

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Design/Engineering</b>	\$1,401	\$0	\$0	\$0	\$150	\$268	\$284	\$703	\$697

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	4/25/2024	10/27/2028

**Project Title:** Flushing System Improvements at Conner Creek and St. Aubin CSO Facilities

**Phase:** Construction

**Phase Title:** Construction

**Phase Budget:** Wastewater

**Start Date:** 7/1/2021

**Phase Status:**

**End Date:** 4/28/2029

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY27	5 Year Total	FY28+
Construction	\$5,605	\$0	\$0	\$0	\$0	\$5,605

**Phase Dates**

Activity Name	Start Date	End Date
Construction	10/27/2026	4/28/2029
Construction - Equipment/Material Purchase	7/1/2021	7/31/2021

**Project Title:** Flushing System Improvements at Conner Creek and St. Aubin CSO Facilities

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>
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**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$7,006,500	\$0	\$0	\$150,800	\$268,000	\$284,800	\$703,600	\$6,302,900

**Description of CIP Changes:**

New CIP added 7/16/21. AC

**Project Title:** Site Improvements at St. Aubin, Belle Isle, and Baby Creek CSO Facilities

**Project Status:** Future Planned - Within 5 Year Plan

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** CSO Facilities

**Class Lvl 3:** Multiple CSO Facilities

☒ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



**Project Engineer/Manager:** Kashmira Patel

**Director:** Chris Nastally

**Managing Dept.:** CSO

**Date Original Business Case Prepared:** 7/19/2021

**Year Project Added to CIP:** 2021

**CIP Budget:** Wastewater

**Project Jurisdiction:** Multiple Counties

**Lookup Location:** Wayne

**Funds and Cost Center:** Wastewater - 5421-892211

#### Problem Statement:

A number of site-related improvements were identified at St. Aubin, Belle Isle and Baby Creek CSO Facilities under CS-299. At the St. Aubin outfall site issues include: 1) poor drainage in the access drive area between Atwater St. and the fenced area; 2) fencing in disrepair; 3) difficulty in removing hatch plates; and 4) limited access to the backwater gates. The poor drainage of the access drive has damaged the road surface and has created issues with accessibility to the secured area. In addition, the concrete surface at the northwest corner of the St. Aubin CSO facility has cracked due to settlement, causing runoff to flow back toward the building.

At Belle Isle, the sodium hypochlorite tanker trucks have difficulty maneuvering next to the site for chemical deliveries. Also, there are safety issues with water ponding near the entrance gate and on the basin surface.

At Baby Creek, the stop logs are stored outside which damages the stop log rubber seals due to exposure to sunlight.

#### Scope of Work/Project Alternatives:

This project includes site improvements at the three CSO facilities. At St. Aubin, various site improvements will be made to address the problems noted above. At Belle Isle, the concrete pavement will be extended to provide an adequate turning radius for the chemical delivery trucks, and other site improvements will be made to address drainage issues. At Baby Creek, a new stop log storage shelter will be constructed to provide protection from UV light for the stop log seals.

#### Other Important Info:

None

**Primary Driver:** 4 - O and M

#### Driver Explanation:

Most of the improvements are O&M and safety related. CS-299 Facilities Assessment performed a best value alternatives evaluation and recommended these projects based on best value.



**Project Title:** Site Improvements at St. Aubin, Belle Isle, and Baby Creek CSO Facilities

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**Scoring****Project Manager Weighted Score:** 55.30

Criteria Name	Score	Comment
Condition	1	Based on average CS-299 condition assessment scores in 2020 for affected assets.
Performance (Service Level/Reliability)	2	Project has moderate to low positive impact on service levels and/or system reliability.
Regulatory (Environmental/Legal)	2	Project will have a moderate to low impact on regulatory issues.
Operations and Maintenance	3	Site improvements has moderate positive impact on O&M.
Health and Safety	3	Project will have moderate positive impact on staff H&S .
Public Benefit	1	Project has no measurable public benefit.
Financial	4	Based on total project cost of project.
Efficiency and Innovation	1	Low impact on business process optimization; no time/cost saving.

**Risk Committee Weighted Score:** 54.60

Criteria Name	Score	Comment
Condition	1	
Performance (Service Level/Reliability)	2	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	2	
Health and Safety	3	
Public Benefit	1	
Financial	4	
Efficiency and Innovation	1	

**Project Title:** Site Improvements at St. Aubin, Belle Isle, and Baby Creek CSO Facilities

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

**Phase Budget:** Wastewater

**Start Date:** 4/21/2027

**Phase Status:**

**End Date:** 12/24/2030

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
<b>GLWA Salaries</b>	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	4/21/2027	12/24/2030
Capital Delivery Salary	4/21/2027	12/24/2030

**Project Title:** Site Improvements at St. Aubin, Belle Isle, and Baby Creek CSO Facilities

**Phase:** Design/Engineering

**Phase Title:** Design/Engineering

**Phase Budget:** Wastewater

**Start Date:** 4/21/2027

**Phase Status:**

**End Date:** 6/23/2030

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY27	5 Year Total	FY28+
<b>Design/Engineering</b>	\$275	\$0	\$0	\$36	\$36	\$235

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	4/21/2027	6/23/2030

**Project Title:** Site Improvements at St. Aubin, Belle Isle, and Baby Creek CSO Facilities

**Phase:** Construction

**Phase Title:** Construction

**Phase Budget:** Wastewater

**Start Date:** 4/23/2029

**Phase Status:**

**End Date:** 12/24/2030

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	<b>Total Costs</b>	<b>Actual Costs</b>	<b>Prior FYs</b>	<b>FY28+</b>
<b>Construction</b>	\$1,102	\$0	\$0	\$1,072

**Phase Dates**

<b>Activity Name</b>	<b>Start Date</b>	<b>End Date</b>
Construction	4/23/2029	12/24/2030

**Project Title:** Site Improvements at St. Aubin, Belle Isle, and Baby Creek CSO Facilities

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>
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**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY27	5 Year Total	FY28+
\$1,377,500	\$0	\$36,900	\$36,900	\$1,307,600

**Description of CIP Changes:**

New CIP added to Portal on 7/16/21 AC

**Project Title:** HVAC Improvements at Puritan Fenkell and Seven Mile CSO Facilities

**Project Status:** Future Planned - Within 5 Year Plan

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** CSO Facilities

**Class Lvl 3:** Multiple CSO Facilities

☒ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**


**Project Engineer/Manager:** Brooke Ballard

**Director:** Chris Nastally

**Managing Dept.:** CSO

**Date Original Business Case Prepared:** 4/15/2021

**Year Project Added to CIP:** 2021

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** Various CSO Facilities

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

A number of HVAC-related improvements were identified at Puritan-Fenkell and Seven Mile CSO Facilities under CS-299. The improvements at both facilities require replacement of a large number of HVAC equipment, due to age of the equipment or improving access for maintenance, and the additional need to provide monitoring for code compliance in the Odor Control and Headworks area.

**Scope of Work/Project Alternatives:**

This project includes replacement of HVAC equipment including PACU-1, HVU-1, HVU-2, HVU-3, SF-1, SF-2, and exhaust fans at both Puritan-Fenkell and Seven Mile CSO Facilities. Also, the project includes improvements to enhance safety in Odor Control and Headworks areas at both the facilities to comply with NFPA 820. This project also includes removal of HVAC equipment from the shunt channel and effluent channel since they are not used and are inoperable.

**Other Important Info:**

NA

**Primary Driver:** 4 - O and M

**Driver Explanation:**

Most of the improvements are O&M related (replacing aging equipment), with a safety component. The safety-related improvements include providing the proper number of air changes and installation of combustible gas detection with audible and visible alarms at all entrances and within the space of the respective areas.

**Project Title:** HVAC Improvements at Puritan Fenkell and Seven Mile CSO Facilities

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**Scoring****Project Manager Weighted Score:** 71.70

Criteria Name	Score	Comment
Condition	2	Based on average CS-299 condition assessment scores in 2020 for affected assets.
Performance (Service Level/Reliability)	2	Project has moderate to low positive impact on service levels and/or system reliability
Regulatory (Environmental/Legal)	2	Project will have a moderate to low impact on regulatory issues
Operations and Maintenance	4	HVAC improvements should alleviate most ongoing O&M issues.
Health and Safety	4	Project will have significant positive impact on staff H&S with improved ventilation.
Public Benefit	1	Project has no measurable public benefit
Financial	4	Based on total project cost of project
Efficiency and Innovation	1	Low impact on business process optimization; no time/cost saving

**Risk Committee Weighted Score:** 57.80

Criteria Name	Score	Comment
Condition	3	
Performance (Service Level/Reliability)	2	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	4	
Health and Safety	3	
Public Benefit	2	
Financial	4	
Efficiency and Innovation	1	

**Project Title:** HVAC Improvements at Puritan Fenkell and Seven Mile CSO Facilities

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**Phase:** GLWA Salaries**Phase Title:** GLWA Salaries

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**Phase Budget:** Wastewater**Start Date:** 4/25/2024**Phase Status:****End Date:** 12/28/2027**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
<b>GLWA Salaries</b>	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	4/25/2024	12/28/2027
Capital Delivery Salary	4/25/2024	12/28/2027



**Project Title:** HVAC Improvements at Puritan Fenkell and Seven Mile CSO Facilities

**Phase:** Design/Engineering

**Phase Title:** Design/Engineering

**Phase Budget:** Wastewater

**Start Date:** 4/25/2024

**Phase Status:**

**End Date:** 6/27/2027

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Design/Engineering</b>	\$301	\$0	\$0	\$40	\$70	\$70	\$26	\$207	\$93

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	4/25/2024	6/27/2027

**Project Title:** HVAC Improvements at Puritan Fenkell and Seven Mile CSO Facilities

**Phase:** Construction

**Phase Title:** Construction

**Phase Budget:** Wastewater

**Start Date:** 7/1/2021

**Phase Status:**

**End Date:** 12/28/2027

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY26	FY27	5 Year Total	FY28+
Construction	\$1,206	\$0	\$0	\$0	\$268	\$268	\$938

**Phase Dates**

Activity Name	Start Date	End Date
Construction	4/27/2026	12/28/2027
Construction - Equipment/Material Purchase	7/1/2021	7/31/2021

**Project Title:** HVAC Improvements at Puritan Fenkell and Seven Mile CSO Facilities

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>
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**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$1,508,590	\$0	\$40,200	\$70,400	\$70,400	\$294,800	\$475,800	\$1,032,790

**Description of CIP Changes:**

New CIP added to Portal 7/16/21 AC

**Project Title:** HVAC Improvements at Conner Creek and Belle Isle CSO Facilities

**Project Status:** Future Planned - Ten-Year CIP

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** CSO Facilities

**Class Lvl 3:** Multiple CSO Facilities

☒ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



**Project Engineer/Manager:** Kashmira Patel

**Director:** Chris Nastally

**Managing Dept.:** CSO

**Date Original Business Case Prepared:** 7/19/2021

**Year Project Added to CIP:** 2021

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** Detroit

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

A number of HVAC-related improvements were identified at Conner Creek and Belle Isle CSO Facilities under CS-299 Facilities Assessment. Most of the improvements are related to ventilation improvements, access to HVAC equipment improvements, and heating/cooling improvements.

**Scope of Work/Project Alternatives:**

The project includes improvements to enhance safety in the Odor Control area at Belle Isle to comply with NFPA 820, as well as improvements to access HVAC equipment in the Chemical Room and Odor Control Area. Other improvements at Belle Isle include the replacement of the unit heaters and improvements to the cooling for the Control Room and Sample Room. At Conner Creek, the project includes improvements to the heating for Maintenance Shop, Electrical Room, and Control Room; improvements to access the Chemical Room AHU; enclosure of ductwork in the Maintenance Shop to meet NFPA-820; and installation of showers in men's and women's restroom.

**Other Important Info:**

None

**Primary Driver:** 4 - O and M

**Driver Explanation:**

Most of the improvements are O&M and safety related. The HVAC improvements will improve worker safety and comfort and help achieve code compliance.

**Project Title:** HVAC Improvements at Conner Creek and Belle Isle CSO Facilities

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**Scoring****Project Manager Weighted Score:** 71.10

Criteria Name	Score	Comment
Condition	2	Based on average CS-299 condition assessment scores in 2020 for affected assets.
Performance (Service Level/Reliability)	2	Project has moderate to low positive impact on service levels and/or system reliability.
Regulatory (Environmental/Legal)	2	Project will have a moderate to low impact on regulatory issues.
Operations and Maintenance	4	HVAC improvements under this project should alleviate most ongoing O&M issues.
Health and Safety	4	Project will have significant positive impact on staff H&S with improved ventilation.
Public Benefit	1	Project has no measurable public benefit.
Financial	3	Based on total project cost of project.
Efficiency and Innovation	1	Low impact on business process optimization; no time/cost saving.

**Risk Committee Weighted Score:** 70.50

Criteria Name	Score	Comment
Condition	2	
Performance (Service Level/Reliability)	2	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	3	
Health and Safety	4	
Public Benefit	1	
Financial	3	
Efficiency and Innovation	1	

**Project Title:** HVAC Improvements at Conner Creek and Belle Isle CSO Facilities

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

**Phase Budget:** Wastewater

**Start Date:** 4/23/2031

**Phase Status:**

**End Date:** 4/26/2034

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
<b>GLWA Salaries</b>	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	4/23/2031	4/26/2034
Capital Delivery Salary	4/23/2031	4/26/2034

**Project Title:** HVAC Improvements at Conner Creek and Belle Isle CSO Facilities

**Phase:** Design/Engineering

**Phase Title:** Design/Engineering

**Phase Budget:** Wastewater

**Start Date:** 4/23/2031

**Phase Status:**

**End Date:** 10/25/2033

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	<b>Total Costs</b>	<b>Actual Costs</b>	<b>Prior FYs</b>	<b>FY28+</b>
<b>Design/Engineering</b>	\$76	\$0	\$0	\$46

**Phase Dates**

<b>Activity Name</b>	<b>Start Date</b>	<b>End Date</b>
Design/Engineering	4/23/2031	10/25/2033

**Project Title:** HVAC Improvements at Conner Creek and Belle Isle CSO Facilities

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**Phase:** Construction**Phase Title:** Construction

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**Phase Budget:** Wastewater**Start Date:** 12/25/2032**Phase Status:****End Date:** 4/26/2034**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Construction	\$306	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Construction	12/25/2032	4/26/2034



**Project Title:** HVAC Improvements at Conner Creek and Belle Isle CSO Facilities

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>
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**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY28+
\$383,600	\$0	\$46,000

**Description of CIP Changes:**

New CIP added to Portal 7/16/2021 AC.

**Project Title:** Control System Upgrades at Conner Creek, Oakwood, and Puritan Fenkell CSO Facilities

**Project Status:** Future Planned - Within 5 Year Plan

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** CSO Facilities

**Class Lvl 3:** Multiple CSO Facilities

☒ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



**Project Engineer/Manager:** Matthew Krieger

**Director:** Chris Nastally

**Managing Dept.:** CSO

**Date Original Business Case Prepared:**

**Year Project Added to CIP:** 2021

**CIP Budget:** Wastewater

**Project Jurisdiction:** Multiple Counties

**Lookup Location:** Various CSO Facilities

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

At the time of this proposed project, there will be a need to update the existing control system to the latest version of Ovation in order to standardize equipment and increase monitoring capabilities at Conner Creek, Oakwood, and Puritan-Fenkell CSO Facilities. In addition, lighting at these facilities is poor and non-existent in some locations, which makes for unsafe working conditions for the staff. There is a need for additional flow meters, level sensors, and process cameras at these facilities. Similar issues related to lighting, remote control and monitoring exist at the Seven Mile and St. Aubin facilities.

**Scope of Work/Project Alternatives:**

This project addresses control system and I&C issues at Conner Creek, Oakwood, and Puritan-Fenkell to make them more reliable. This project updates the Ovation control system to the latest version, which will enhance the overall performance of these facilities. Additional lighting will be provided at selected locations at these facilities to improve worker safety. At Conner Creek, redundant level sensors will be removed, new flow meter for dewatering flow downstream of the junction chamber will be provided, and chemical tank level indication and process cameras will be provided. At Oakwood, local control stations will be provided for the chemical feed pump to improve operations. Also, chemical tank level indication and process cameras will be provided at Oakwood and Puritan-Fenkell.

Lighting improvements at Seven Mile and St. Aubin, and I&C improvements at St. Aubin are also included in this project due to the similarity in design and scope of the project. I&C improvements at St. Aubin include providing remote control of flushing and dewatering pumps at the outfall, and for the flushing valve for the influent channel, as well as installation of process cameras.

**Other Important Info:**

**Primary Driver:** 4 - O and M

**Driver Explanation:**

Most of the upgrades will improve O&M capabilities and safety. The control system upgrade is required to maintain system reliability. Additional lighting will improve working conditions in the confined spaces.

**Project Title:** Control System Upgrades at Conner Creek, Oakwood, and Puritan Fenkell CSO Facilities

### Scoring

**Project Manager Weighted Score:** 72.50

Criteria Name	Score	Comment
Condition	1	Based on average CS-299 condition assessment scores in 2020 for affected assets.
Performance (Service Level/Reliability)	3	Cancelling project would potentially cause reliability issues.
Regulatory (Environmental/Legal)	2	Project will have a moderate to low impact on regulatory issues
Operations and Maintenance	4	Control system improvements should alleviate most ongoing O&M issues.
Health and Safety	4	Project will have significant positive impact on staff H&S with additional lighting and remote control of equipment.
Public Benefit	1	Project has no measurable public benefit
Financial	5	Based on total project cost of project
Efficiency and Innovation	1	Low impact on business process optimization; no time/cost saving

**Risk Committee Weighted Score:** 59.00

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	4	
Health and Safety	3	
Public Benefit	1	
Financial	4	
Efficiency and Innovation	1	

**Project Title:** Control System Upgrades at Conner Creek, Oakwood, and Puritan Fenkell CSO Facilities

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

**Phase Budget:** Wastewater

**Start Date:** 4/22/2026

**Phase Status:**

**End Date:** 12/25/2029

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
<b>GLWA Salaries</b>	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	4/22/2026	12/25/2029
Capital Delivery Salary	4/22/2026	12/25/2029

**Project Title:** Control System Upgrades at Conner Creek, Oakwood, and Puritan Fenkell CSO Facilities

**Phase:** Design/Engineering

**Phase Title:** Design/Engineering

**Phase Budget:** Wastewater

**Start Date:** 4/22/2026

**Phase Status:**

**End Date:** 6/24/2029

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY26	FY27	5 Year Total	FY28+
<b>Design/Engineering</b>	\$1,184	\$0	\$0	\$0	\$147	\$147	\$1,012

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	4/22/2026	6/24/2029

**Project Title:** Control System Upgrades at Conner Creek, Oakwood, and Puritan Fenkell CSO Facilities

**Phase:** Construction

**Phase Title:** Construction

**Phase Budget:** Wastewater

**Start Date:** 7/1/2021

**Phase Status:**

**End Date:** 12/25/2029

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	<b>Total Costs</b>	<b>Actual Costs</b>	<b>Prior FYs</b>	<b>FY28+</b>
<b>Construction</b>	\$4,736	\$0	\$0	\$4,489

**Phase Dates**

<b>Activity Name</b>	<b>Start Date</b>	<b>End Date</b>
Construction	4/24/2028	12/25/2029
Construction - Equipment/Material Purchase	7/1/2021	7/31/2021

**Project Title:** Control System Upgrades at Conner Creek, Oakwood, and Puritan Fenkell CSO Facilities

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>
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**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY26	FY27	5 Year Total	FY28+
\$5,921,080	\$0	\$0	\$147,400	\$147,400	\$5,501,100

**Description of CIP Changes:**

New CIP added 7/16/21 AC.

**Project Title:** Facility Improvements at Puritan Fenkell and Seven Mile CSO Facilities

**Project Status:** Future Planned - Within 5 Year Plan

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** CSO Facilities

**Class Lvl 3:** Multiple CSO Facilities

☒ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



**Project Engineer/Manager:** Matthew Krieger

**Director:** Chris Nastally

**Managing Dept.:** CSO

**Date Original Business Case Prepared:**

**Year Project Added to CIP:** 2021

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** Various CSO Facilities

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

At Puritan Fenkell and Seven Mile, there are various issues that need to be addressed based on the CS-299 Facilities Assessment. There is poor accessibility to the bearing assemblies of the basin's tipping buckets and to the dewatering forcemain for inspection and cleaning. In addition, there are drainage issues at both facilities, which become a safety concern for personnel accessing the buildings during the winter months when the water freezes. At Puritan Fenkell, there is no way to isolate the dry and wet weather wet wells. Also, at Puritan-Fenkell, the removal and installation of effluent stop logs is difficult. The entrance gate to Puritan-Fenkell has recurring maintenance issues which is a security concern. At Seven Mile, the effluent hatch cover plates are heavy and difficult to remove.

**Scope of Work/Project Alternatives:**

This project provides surface access to the tipping buckets and dewatering forcemains to ease O&M at both the facilities. Similarly, the project will improve the drainage of water at the two facilities. At Puritan Fenkell, isolation of the wet weather and dry weather wet wells will be provided. Also at Puritan Fenkell, a stop log removal system will be provided. At Seven Mile, the hatch cover plates will be replaced with lighter-weight hatches. The effluent stop log and effluent hatch replacement would not be needed if these two basins are converted to complete capture basins.

**Other Important Info:**

The effluent stop log and effluent hatch replacement would not be needed if these two basins are converted to complete capture basins.

**Primary Driver:** 4 - O and M

**Driver Explanation:**

Most of the improvements are O&M and safety related. CS-299 Facilities Assessment performed a best value evaluation of alternatives and recommended these projects based on this evaluation.



**Project Title:** Facility Improvements at Puritan Fenkell and Seven Mile CSO Facilities

### Scoring

**Project Manager Weighted Score:** 71.90

Criteria Name	Score	Comment
Condition	1	Based on average CS-299 condition assessment scores in 2020 for affected assets.
Performance (Service Level/Reliability)	3	Cancelling project would potentially cause reliability issues.
Regulatory (Environmental/Legal)	2	Project will have a moderate to low impact on regulatory issues
Operations and Maintenance	4	Improved accessibility to the tipping buckets and dewatering forcemain should alleviate most ongoing O&M issues.
Health and Safety	4	Project will have significant positive impact on staff H&S with additional lighting and remote control of equipment.
Public Benefit	1	Project has no measurable public benefit
Financial	4	Based on total project cost of project
Efficiency and Innovation	1	Low impact on business process optimization; no time/cost saving

**Risk Committee Weighted Score:** 56.80

Criteria Name	Score	Comment
Condition	1	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	4	
Health and Safety	3	
Public Benefit	1	
Financial	4	
Efficiency and Innovation	1	

**Project Title:** Facility Improvements at Puritan Fenkell and Seven Mile CSO Facilities

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**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

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**Phase Budget:** Wastewater

**Start Date:** 4/21/2027

**Phase Status:**

**End Date:** 12/24/2030

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
<b>GLWA Salaries</b>	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	4/21/2027	12/24/2030
Capital Delivery Salary	4/21/2027	12/24/2030

**Project Title:** Facility Improvements at Puritan Fenkell and Seven Mile CSO Facilities

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**Phase:** Design/Engineering**Phase Title:** Design/Engineering

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**Phase Budget:** Wastewater**Start Date:** 4/21/2027**Phase Status:****End Date:** 6/23/2030**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY27	5 Year Total	FY28+
<b>Design/Engineering</b>	\$178	\$0	\$0	\$0	\$0	\$174

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	4/21/2027	6/23/2030

**Project Title:** Facility Improvements at Puritan Fenkell and Seven Mile CSO Facilities

**Phase:** Construction

**Phase Title:** Construction

**Phase Budget:** Wastewater

**Start Date:** 7/1/2021

**Phase Status:**

**End Date:** 12/24/2030

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	<b>Total Costs</b>	<b>Actual Costs</b>	<b>Prior FYs</b>	<b>FY28+</b>
<b>Construction</b>	\$715	\$0	\$0	\$670

**Phase Dates**

<b>Activity Name</b>	<b>Start Date</b>	<b>End Date</b>
Construction	4/23/2029	12/24/2030
Construction - Equipment/Material Purchase	7/1/2021	7/31/2021

**Project Title:** Facility Improvements at Puritan Fenkell and Seven Mile CSO Facilities

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>
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**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY27	5 Year Total	FY28+
\$894,020	\$0	\$0	\$0	\$844,300

**Description of CIP Changes:**

New CIP added to Portal 7/16/21 AC.

**Project Title:** Conversion to Complete Capture Basin at Puritan Fenkell and Seven Mile CSO Facilities

**Project Status:** Future Planned - Within 5 Year Plan

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** CSO Facilities

**Class Lvl 3:** Multiple CSO Facilities

☒ **Project New to CIP**

- ☒ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**


**Project Engineer/Manager:** Brooke Ballard

**Director:** Chris Nastally

**Managing Dept.:** CSO

**Date Original Business Case Prepared:**  
 4/15/2021

**Year Project Added to CIP:** 2021

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** Various CSO Facilities

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

The Wastewater Master Plan identified that Puritan Fenkell and Seven Mile can be operated in complete capture mode for flows up to the 10-year 1-hour design storm. These facilities have not experienced the originally anticipated level of flows and, in fact, the facilities had no discharge for 3 years from 2016 to 2018 and only a few discharges from Puritan Fenkell in 2019 and 2020.

**Scope of Work/Project Alternatives:**

This project includes modifying Puritan-Fenkell and Seven Mile Facilities to a capture-only facilities.

**Other Important Info:**

NA

**Primary Driver:** 4 - O and M

**Driver Explanation:**

Conversion to complete capture would allow for the cost avoidance of operating and maintaining the sodium hypochlorite feed and storage systems, and would not require operations labor to be onsite during a storm event. It would also eliminate the risk of permit violations.

**Project Title:** Conversion to Complete Capture Basin at Puritan Fenkell and Seven Mile CSO Facilities

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**Scoring****Project Manager Weighted Score:** 72.60

Criteria Name	Score	Comment
Condition	1	Based on average CS-299 condition assessment scores in 2020 for affected assets.
Performance (Service Level/Reliability)	2	Project has moderate to low positive impact on service levels and/or system reliability
Regulatory (Environmental/Legal)	2	Project will have a moderate to low impact on regulatory issues
Operations and Maintenance	4	Project should alleviate most ongoing O&M issues.
Health and Safety	4	Project will have significant positive impact on staff H&S.
Public Benefit	1	Project has no measurable public benefit
Financial	5	Based on total project cost of project
Efficiency and Innovation	3	Project will have a moderate positive impact on savings; process efficiency for a more robust system and less O&M, and time and cost savings.

**Risk Committee Weighted Score:** 72.00

Criteria Name	Score	Comment
Condition	1	
Performance (Service Level/Reliability)	2	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	4	
Health and Safety	4	
Public Benefit	1	
Financial	4	
Efficiency and Innovation	3	

**Project Title:** Conversion to Complete Capture Basin at Puritan Fenkell and Seven Mile CSO Facilities

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**Phase:** GLWA Salaries**Phase Title:** GLWA Salaries

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**Phase Budget:** Wastewater**Start Date:** 4/22/2026**Phase Status:****End Date:** 4/25/2031**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
<b>GLWA Salaries</b>	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	4/22/2026	4/25/2031
Capital Delivery Salary	4/22/2026	4/25/2031



**Project Title:** Conversion to Complete Capture Basin at Puritan Fenkell and Seven Mile CSO Facilities

**Phase:** Design/Engineering

**Phase Title:** Design/Engineering

**Phase Budget:** Wastewater

**Start Date:** 4/22/2026

**Phase Status:**

**End Date:** 10/24/2030

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY26	FY27	5 Year Total	FY28+
<b>Design/Engineering</b>	\$888	\$0	\$0	\$0	\$0	\$0	\$650

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	4/22/2026	10/24/2030

**Project Title:** Conversion to Complete Capture Basin at Puritan Fenkell and Seven Mile CSO Facilities

**Phase:** Construction

**Phase Title:** Construction

**Phase Budget:** Wastewater

**Start Date:** 7/1/2021

**Phase Status:**

**End Date:** 4/25/2031

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	<b>Total Costs</b>	<b>Actual Costs</b>	<b>Prior FYs</b>	<b>FY28+</b>
<b>Construction</b>	\$3,553	\$0	\$0	\$1,172

**Phase Dates**

<b>Activity Name</b>	<b>Start Date</b>	<b>End Date</b>
Construction	10/24/2028	4/25/2031
Construction - Equipment/Material Purchase	7/1/2021	7/31/2021

**Project Title:** Conversion to Complete Capture Basin at Puritan Fenkell and Seven Mile CSO Facilities

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>
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**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY26	FY27	5 Year Total	FY28+
\$4,442,170	\$0	\$0	\$0	\$0	\$1,822,850

**Description of CIP Changes:**

New CIP added to Portal 7/16/21 AC.

**Project Title:** Hubbell Southfield CSO Facility Improvements

**Project Status:** Future Planned - Within 5 Year Plan

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** CSO Facilities

**Class Lvl 3:** Hubbell Southfield

☒ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**


**Project Engineer/Manager:** Kashmira Patel

**Director:** Chris Nastally

**Managing Dept.:** CSO

**Date Original Business Case Prepared:** 7/19/2021

**Year Project Added to CIP:** 2021

**CIP Budget:** Wastewater

**Project Jurisdiction:** Oakland County

**Lookup Location:** Dearborn

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

The Hubbell Southfield CSO Basin was constructed in the late 1990s and has a number of major capital improvement needs. The Hubbell Southfield spray-flushing system is ineffective for removing solids and debris from the floor of the basin and shunt channel after a storm event. Currently, operators must manually use fire hoses and lower a bobcat into the basin after storm events, which is a safety concern due to the confined space, sloped and slippery floors, and poorly lit conditions. The dewatering pumps are unable to handle heavy grit loads, and the sump pumps in the basin were removed from service as the pumps got routinely overwhelmed by solids. In addition, the chemical feed pumps are expensive to maintain and there is a lack of automation of the feed system. There is a need to update the control system to the latest version and increase monitoring capabilities. Site issues noted by CS-299 include basin roof drainage problems, the need for resurfacing the service drive around the basin and replacing security fencing.

**Scope of Work/Project Alternatives:**

A new basin flushing system is recommended in the CS-299 Facilities Assessment consisting of flushing gates and reservoirs (similar to those installed at Conner Creek, Oakwood and Belle Isle CSO Facilities). The project includes new dewatering pumps to replace existing pumps and new basin sump pumps with a solids fluidization system to fluidize accumulated grit to replace non-functional pumps. The project also includes chemical feed system improvements, including pump replacement to standardize pumping systems between GLWA CSO facilities and automatic chemical feed control, control system replacement and various I&C improvements, additional lighting in the basin and around the site, and various site improvements.

**Other Important Info:**

None.

**Primary Driver:** 4 - O and M

**Driver Explanation:**

Most of the improvements are O&M-related, with a regulatory component. The permit requirement to clean the basin after every storm event is not achieved. The proposed flushing system should alleviate this issue by allowing the basin to be cleaned after every event. Also, the chemical feed system improvements should allow the system to better control hypochlorite feed rates, thus improving the ability to meet effluent total residual chlorine (TRC) goals set by EGLE, and possibly avoid the addition of Dechlorination.

**Project Title:** Hubbell Southfield CSO Facility Improvements

**Scoring**
**Project Manager Weighted Score:** 78.70

Criteria Name	Score	Comment
Condition	1	Based on average CS-299 condition assessment scores in 2020 for affected assets.
Performance (Service Level/Reliability)	5	Current performance is unacceptable because it does not meet permit requirement to clean basin after every wet weather event.
Regulatory (Environmental/Legal)	3	Chemical feed system improvements should provide an improved ability to meet effluent TRC goals.
Operations and Maintenance	4	Flushing system and chemical feed system improvements should alleviate most ongoing O&M issues.
Health and Safety	4	Project will have significant positive impact on staff H&S because operators will not need to routinely enter the basin for flushing.
Public Benefit	1	Project has no measurable public benefit.
Financial	5	Based on total project cost of project.
Efficiency and Innovation	3	New flushing system will significantly reduce amount of water for flushing.

**Risk Committee Weighted Score:** 75.70

Criteria Name	Score	Comment
Condition	2	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	4	
Health and Safety	4	
Public Benefit	1	
Financial	5	
Efficiency and Innovation	2	

**Project Title:** Hubbell Southfield CSO Facility Improvements

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**Phase:** GLWA Salaries**Phase Title:** GLWA Salaries

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**Phase Budget:** Wastewater**Start Date:** 4/28/2023**Phase Status:****End Date:** 4/30/2029**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
<b>GLWA Salaries</b>	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	4/28/2023	4/30/2029
Capital Delivery Salary	4/28/2023	4/30/2029

**Project Title:** Hubbell Southfield CSO Facility Improvements

**Phase:** Design/Engineering

**Phase Title:** Design/Engineering

**Phase Budget:** Wastewater

**Start Date:** 4/28/2023

**Phase Status:**

**End Date:** 10/30/2028

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Design/Engineering</b>	\$8,554	\$0	\$0	\$532	\$1,600	\$1,600	\$1,800	\$321	\$5,854	\$2,700

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	4/28/2023	10/30/2028

**Project Title:** Hubbell Southfield CSO Facility Improvements

**Phase:** Construction

**Phase Title:** Construction

**Phase Budget:** Wastewater

**Start Date:** 10/30/2025

**Phase Status:**

**End Date:** 4/30/2029

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY26	FY27	5 Year Total	FY28+
Construction	\$30,021	\$0	\$0	\$0	\$3,021	\$3,021	\$27,000

**Phase Dates**

Activity Name	Start Date	End Date
Construction	10/30/2025	4/30/2029



**Project Title:** Hubbell Southfield CSO Facility Improvements

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>
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**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$38,576,300	\$0	\$532,700	\$1,600,000	\$1,600,000	\$1,800,000	\$3,343,600	\$8,876,300	\$29,700,000

**Description of CIP Changes:**

New CIP added to Portal 7/16/21. AC

**Project Title:** CSO Hubbell Southfield VR-8 Gate Improvements

**Project Status:** Future Planned - Within 5 Year Plan

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** CSO Facilities

**Class Lvl 3:** Hubbell Southfield

☒ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



**Project Engineer/Manager:** Brooke Ballard

**Director:** Chris Nastally

**Managing Dept.:** CSO

**Date Original Business Case Prepared:** 4/15/2021

**Year Project Added to CIP:** 2021

**CIP Budget:** Wastewater

**Project Jurisdiction:** Wayne County - Outside Detroit

**Lookup Location:** Dearborn

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

The VR-8 Regulator is located upstream of the Hubbell-Southfield CSO Facility in the center median of Michigan Avenue east of the Southfield Freeway. The regulator consists of two stainless steel slide gates that are adjusted by SCADA control to regulate flow from the Hubbell-Southfield sewer to the NWI. A rehabilitation project was designed in 2013 by Metco, but not implemented. Rehabilitation of the VR-8 Regulator is still needed.

**Scope of Work/Project Alternatives:**

The rehabilitation of the VR-8 Regulator includes replacement of the slide gates and actuator, and access improvements in the median near the gates and the control panel. The improvements will help maintain system reliability and functionality.

**Other Important Info:**

n/a

**Primary Driver:** 4 - O and M

**Driver Explanation:**

These improvements are intended to restore the condition of existing equipment.

**Project Title:** CSO Hubbell Southfield VR-8 Gate Improvements

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**Scoring****Project Manager Weighted Score:** 48.70

Criteria Name	Score	Comment
Condition	1	Based on average CS-299 condition assessment scores in 2020 for affected assets.
Performance (Service Level/Reliability)	3	Cancelling project would potentially cause reliability issues.
Regulatory (Environmental/Legal)	2	Project will have a moderate to low impact on regulatory issues
Operations and Maintenance	4	VR-8 Gate improvements should alleviate most ongoing O&M issues.
Health and Safety	2	Project has limited positive impact on staff/public H&S
Public Benefit	1	Project has no measurable public benefit
Financial	4	Based on total project cost of project
Efficiency and Innovation	1	Low impact on business process optimization; no time/cost saving

**Risk Committee Weighted Score:** 50.20

Criteria Name	Score	Comment
Condition	3	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	4	
Health and Safety	2	
Public Benefit	1	
Financial	4	
Efficiency and Innovation	1	

**Project Title:** CSO Hubbell Southfield VR-8 Gate Improvements

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**Phase:** GLWA Salaries**Phase Title:** GLWA Salaries

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**Phase Budget:** Wastewater**Start Date:** 4/21/2027**Phase Status:****End Date:** 12/24/2030**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
<b>GLWA Salaries</b>	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	4/21/2027	12/24/2030
Capital Delivery Salary	4/21/2027	12/24/2030

**Project Title:** CSO Hubbell Southfield VR-8 Gate Improvements

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**Phase:** Design/Engineering**Phase Title:** Design/Engineering

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**Phase Budget:** Wastewater**Start Date:** 4/21/2027**Phase Status:****End Date:** 6/23/2030**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY27	5 Year Total	FY28+
<b>Design/Engineering</b>	\$353	\$0	\$0	\$50	\$50	\$293

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	4/21/2027	6/23/2030

**Project Title:** CSO Hubbell Southfield VR-8 Gate Improvements

**Phase:** Construction

**Phase Title:** Construction

**Phase Budget:** Wastewater

**Start Date:** 7/1/2021

**Phase Status:**

**End Date:** 12/24/2030

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY28+
Construction	\$1,415	\$0	\$0	\$1,315

**Phase Dates**

Activity Name	Start Date	End Date
Construction	4/23/2029	12/24/2030
Construction - Equipment/Material Purchase	7/1/2021	7/31/2021

**Project Title:** CSO Hubbell Southfield VR-8 Gate Improvements

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>
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**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY27	5 Year Total	FY28+
\$1,769,780	\$0	\$50,300	\$50,300	\$1,608,930

**Description of CIP Changes:**

New CIP added to Portal 7/16/21 AC.

**Project Title:** Leib Improvements for Meldrum Diversion

**Project Status:** Reclassified

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** CSO Facilities

**Class Lvl 3:** Leib

☐ **Project New to CIP**

- ☐ Innovation
- ☒ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ Redundancy
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☒ **Predecessor Project(s)**



Leib Screen

**Project Engineer/Manager:** Chris Nastally

**Director:** Chris Nastally

**Managing Dept.:** CSO

**Date Original Business Case Prepared:**  
 7/20/2020

**Year Project Added to CIP:** 2020

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** Leib CSO Facility

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

The Leib CSO Facility has been under utilized for the last 20 years. The WWMP is recommending a diversion to the facility which will increase utilization and close an untreated CSO outfall. To be prepared for this increased utilization, improvements to the facility are required. The chemical system is functionally failed and the screening system presents operational and maintenance difficulties (pilot facility with different types of screens requiring different maintenance and having different failure modes).

**Scope of Work/Project Alternatives:**

To be ready for the Meldrum Diversion project, the following will be improved. Replacement of fine screens, replacement of the chemical feed system, improved automation for chemical dosing, improved access and maintenance of equipment, miscellaneous electrical/hvac and I&C improvements, a new site access drive to improve safety, as well as various safety improvements to facility hatches.

**Other Important Info:**

This is a predecessor project to the Meldrum diversion project and ideally should be constructed prior to completion of the Meldrum Diversion to allow use of that and testing of equipment installed as a part of that project.

**Primary Driver:** 1 - Condition

**Driver Explanation:**

The chemical system is difficult to operate and maintain. In many instances only a few pumps are in service (and since the facility has been under utilized, this hasn't been an issue). The supporting system of the chemical pumps is near the end of it's 20-year design life and requires replacement. The screens are difficult to operate and there have been other innovations in the screen industry since these were installed that will allow better operation & maintenance.



**Project Title:** Leib Improvements for Meldrum Diversion

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**Scoring****Project Manager Weighted Score:** 68.00

Criteria Name	Score	Comment
Condition	4	Scores carried over from previous year
Performance (Service Level/Reliability)	4	Scores carried over from previous year
Regulatory (Environmental/Legal)	3	Scores carried over from previous year
Operations and Maintenance	4	Scores carried over from previous year
Health and Safety	3	Scores carried over from previous year
Public Benefit	5	Scores carried over from previous year
Financial	4	Scores carried over from previous year
Efficiency and Innovation	2	Scores carried over from previous year

**Risk Committee Weighted Score:** 79.40

Criteria Name	Score	Comment
Condition	4	Scores carried over from previous year
Performance (Service Level/Reliability)	4	Scores carried over from previous year
Regulatory (Environmental/Legal)	4	Scores carried over from previous year
Operations and Maintenance	4	Scores carried over from previous year
Health and Safety	3	Scores carried over from previous year
Public Benefit	5	Scores carried over from previous year
Financial	4	Scores carried over from previous year
Efficiency and Innovation	4	Scores carried over from previous year

**Project Title:** Leib Improvements for Meldrum Diversion

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

**Phase Budget:**
**Start Date:** 7/1/2020

**Phase Status:**
**End Date:** 6/30/2028

**Cost Allocation:**
**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**
**Cost Est. Class:**
**Cost Est. Source:**
**Cost Est. Date:**
**Cost Est. Prepared By:**
**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2020	6/30/2028
Capital Delivery Salary	7/1/2020	6/30/2028
Contractual Professional Services	7/1/2020	6/30/2028
Other Capital Improvement Costs	7/1/2020	6/30/2028
Capitalized Interest	7/1/2020	6/30/2028

**Project Title:** Leib Improvements for Meldrum Diversion

**Phase:** Design & Construction Assistance # 1

**Phase Title:** Study, Design, Construction Assistance

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	7/1/2020
<b>Phase Status:</b>	Future Planned New	<b>End Date:</b>	6/30/2028
<b>Cost Allocation:</b>	CSO 83/17	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

Study efforts (budget included in "design" for now), and Construction assistance efforts.

<b>Cost Est. Class:</b> Class 4	<b>Cost Est. Source:</b> Jacobs Engineering
<b>Cost Est. Date:</b> 8/16/2020	<b>Cost Est. Prepared By:</b> Allen Gelderloos

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Design &amp; Construction Assistance # 1</b>	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	7/1/2020	6/30/2025
Design/Engineering (CA)	10/24/2024	6/30/2028

**Project Title:** Leib Improvements for Meldrum Diversion

**Phase:** Construction # 1

**Phase Title:** Construction

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	10/24/2024
<b>Phase Status:</b>	Future Planned New	<b>End Date:</b>	6/30/2028
<b>Cost Allocation:</b>	CSO 83/17	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

Construction related efforts

<b>Cost Est. Class:</b> Class 4	<b>Cost Est. Source:</b> Jacobs Engineering
<b>Cost Est. Date:</b> 8/16/2020	<b>Cost Est. Prepared By:</b> Allen Gelderloos

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY25	FY26	FY27	5 Year Total	FY28+
<b>Construction # 1</b>	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Construction	10/24/2024	6/30/2028

**Project Title:** Leib Improvements for Meldrum Diversion

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2022	\$8,241	\$25	\$254	\$1,228	\$649	\$2,713	\$3,396	\$1,414	\$10,942

**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Description of CIP Changes:**

2020-07 - New to CIP (project was previously included under the "unallocated" portion of the CSO Program 260600 in 2019 CIP Update. It was in unallocated because the scope of the work wasn't known but is now better defined mid-CS-299 completion.

5-5-2021-Project reclassified to project 270004. AC

**Project Title:** Baby Creek Outfall Improvements Project

**Project Status:** Active - Procurement - Design

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** CSO Facilities

**Class Lvl 3:** Baby Creek

☐ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



Example of Proposed Facility

**Project Engineer/Manager:** Matthew Krieger

**Director:** Chris Nastally

**Managing Dept.:** CSO

**Date Original Business Case Prepared:** 8/9/2019

**Year Project Added to CIP:** 2019

**CIP Budget:** Wastewater

**Project Jurisdiction:** Multiple Counties

**Lookup Location:** Baby Creek CSO Facility

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

A facility is required to be constructed in order to ensure continued access to the Baby Creek Outfall. In addition to facility construction, system improvements which address sediment accumulation are needed to ensure the CSO can meet NPDES requirements. This system improvement will likely be a flushing system installed inside the outfall, but the best solution is not known at this time. The triple barrel Baby Creek Outfall consists of (3) 14'-6" wide by 17'-6" tall concrete box culverts which extend from the Baby Creek Screening & Disinfection Facility to the Baby Creek Outfall on the Rouge River (approximately 5,500 feet). Sediment accumulation has been an ongoing problem in the outfall, since original construction. That is because there is no way to flush the outfall, and no easy way to clean the accumulated debris from the outfall. Having debris in the outfall will cause operational issues in terms of loss in capacity to transport flow, potential re-growth of bacteria during events making disinfection more difficult or require more chemical disinfection, and limiting GLWA's ability to perform inspections and

**Scope of Work/Project Alternatives:**

This project consists of a study and design. Construction is anticipated from the design, but since the flushing system solution cannot be known at this time this phase is not included in the project due to the variability in alternatives and their associated costs. The study and design will assess the proper ways to clean the pipes, facilitate future maintenance, flushing of the pipes after rain events, and perform assessments of the backwater gates and ensure proper instrumentation is installed in the outfall to facilitate better operations and monitoring. In addition to this, the current pipes as they pass through the Woodmere Cemetery have a very minimal easement making future maintenance and access very difficult. This project will endeavor to identify the limits of a proper easement which facilitates access necessary for GLWA to properly maintain the outfall, and the Consultant will assist GLWA in acquiring these easements. This easement will likely be through Woodmere Cemetery and the Patton Park between Vernor & the Baby Creek SDF. GLWA also anticipates the Consultant providing Construction Assistance once this project goes into Construction.

**Other Important Info:**

The current outfall is not capable of being flushed and the solids level will build up after each rain event. Furthermore, the rising river level continues to impact this facility and the outfalls capacity. Having a build up of sludge does not favor Baby Creek in passing the necessary flows because the headloss through the pipes is small and the capacity of the pipes are reduced to the reduction in cross-sectional area.

**Primary Driver:** 1 - Condition

**Driver Explanation:**

Sediment has accumulated over 6 feet deep in some areas which affects the ability of the CSO to meet NPDES requirements and interferes with the proper operation of the backwater gates. There is currently no way to clean this sediment in the outfall. Current access points in the cemetery are contained within a limited easement that prohibits conducting regular cleanings because there are gravesites over the pipe, and there is inadequate space for equipment. An access facility is required to correct the current conditions and assure access in the future.

**Project Title:** Baby Creek Outfall Improvements Project

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adequately assess the condition of the entire pipe.

**Project Title:** Baby Creek Outfall Improvements Project

**Scoring**
**Project Manager Weighted Score:** 79.70

Criteria Name	Score	Comment
Condition	2	Sediment build up has minor operational impact
Performance (Service Level/Reliability)	5	Sediment build up is causing significant capacity and performance problems in the ability of the facility to store and treat wastewater.
Regulatory (Environmental/Legal)	3	Project will positively impact the facility's ability to meet disinfection requirements
Operations and Maintenance	5	Access to the basin is unavailable and sediment cannot be cleaned out, basin cannot be accessed for any repair activity without unsustainable measures
Health and Safety	3	Project will have a moderate positive impact to health and safety
Public Benefit	4	Project will significantly improve system performance, increase storage capacity and improve effectiveness of disinfection. Which will better utilize our existing infrastructure.
Financial	3	Project will reduce costs associated with repairs by allowing standard access (access to outfall cannot currently be accessed by standard means)
Efficiency and Innovation	4	Project will significantly improve operational efficiency of the disinfection system

**Risk Committee Weighted Score:** 80.10

Criteria Name	Score	Comment
Condition	2	Scores carried over from previous year
Performance (Service Level/Reliability)	5	Scores carried over from previous year
Regulatory (Environmental/Legal)	4	Scores carried over from previous year
Operations and Maintenance	4	Scores carried over from previous year
Health and Safety	3	Scores carried over from previous year
Public Benefit	4	Scores carried over from previous year
Financial	3	Scores carried over from previous year
Efficiency and Innovation	4	Scores carried over from previous year



**Project Title:** Baby Creek Outfall Improvements Project

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	11/4/2019
<b>Phase Status:</b>	Future Planned Start	<b>End Date:</b>	3/31/2028
<b>Cost Allocation:</b>	CTA	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

<b>Cost Est. Class:</b>	<b>Cost Est. Source:</b>
<b>Cost Est. Date:</b>	<b>Cost Est. Prepared By:</b>

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$2,629	\$1,069	\$1,069	\$217	\$213	\$265	\$265	\$265	\$265	\$1,275	\$67

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	9/9/2022	3/31/2028
Capital Delivery Salary	9/9/2022	3/31/2028
Contr. Professional Services (CS-272 - 71009A.01/02/03, 72009B.01/C.01, 72019A.01, 72022A.03	11/4/2019	9/7/2021

**Project Title:** Baby Creek Outfall Improvements Project

**Phase:** Design-Build # 1

**Phase Title:** Design - Build of Baby Creek Outfall Improvements

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	9/9/2022
<b>Phase Status:</b>	Active - Pre-Procurement	<b>End Date:</b>	3/31/2028
<b>Cost Allocation:</b>	TBD	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

Phase includes design of flushing system for the outfall, and subsequent construction of the outfall. This project phase will include construction, but the construction phase is not identified as of yet because of the selected alternatives are not known and the costs can vary significantly. Project will also include improvements to the backwater gates and instrumentation.

<b>Cost Est. Class:</b> Class 5	<b>Cost Est. Source:</b> Design Consultant
<b>Cost Est. Date:</b> 8/18/2020	<b>Cost Est. Prepared By:</b> M. Krieger

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Design-Build # 1</b>	\$10,657	\$0	\$0	\$0	\$1,036	\$2,334	\$2,334	\$2,334	\$2,134	\$10,174	\$482

**Phase Dates**

Activity Name	Start Date	End Date
Design-Build	9/9/2022	3/31/2028

**Project Title:** Baby Creek Outfall Improvements Project

**Phase:** Miscellaneous

**Phase Title:** Miscellaneous

**Phase Budget:** Wastewater

**Start Date:** 7/1/2020

**Phase Status:**

**End Date:** 6/30/2021

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Miscellaneous	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

**Project Title:** Baby Creek Outfall Improvements Project

**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total
2021	\$2,158	\$79	\$1,251	\$907	\$0	\$0	\$0	\$0	\$2,237
2022	\$17,680	\$2	\$1,143	\$1,807	\$1,507	\$6,796	\$6,796	\$774	\$18,826

**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$13,286,831	\$1,069,031	\$217,800	\$1,250,000	\$2,600,000	\$2,600,000	\$2,600,000	\$2,400,000	\$11,450,000	\$550,000

**Description of CIP Changes:**

2019 - Project added to the database.

2020-07 - Project scope, schedule, budget updated.

**Project Title:** Baby Creek CSO Facility Influent Flushing System

**Project Status:** Future Planned - Ten-Year CIP

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** CSO Facilities

**Class Lvl 3:** Baby Creek

☒ **Project New to CIP**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☒ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**



**Project Engineer/Manager:** Brooke Ballard

**Director:** Chris Nastally

**Managing Dept.:** CSO

**Date Original Business Case Prepared:** 4/15/2021

**Year Project Added to CIP:** 2021

**CIP Budget:** Wastewater

**Project Jurisdiction:** Wayne County - Outside Detroit

**Lookup Location:** Baby Creek

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

A significant amount of solids can accumulate in the Baby Creek influent channel area, immediately upstream of the weir wall at the Headworks. Significant solids buildup can cause hydraulic restrictions and impede inspection of influent flow meters. There is no flushing system at this location and solids removal must be performed periodically by a contractor which is a high-risk activity, as well as costly. In addition, the S-2-1 sluice gate opening does not extend to the bottom of the influent channel to allow for complete dewatering (or solids flushing) of the influent area.

**Scope of Work/Project Alternatives:**

This project includes evaluation and construction, if feasible, of a new flushing system in the influent area. The project will also include modifying the opening of the sluice gate S-2-1 to make the bottom of the gate opening at a lower elevation which would allow the flushed solids to enter the dewatering well.

**Other Important Info:**

NA

**Primary Driver:** 4 - O and M

**Driver Explanation:**

With a flushing system, the solids in the influent area can be removed after every storm, thus reducing buildup of solids and significantly reducing risk of access to this area..

**Project Title:** Baby Creek CSO Facility Influent Flushing System

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**Scoring****Project Manager Weighted Score:** 72.90

Criteria Name	Score	Comment
Condition	1	Based on average CS-299 condition assessment scores in 2020 for affected assets.
Performance (Service Level/Reliability)	3	Cancelling project would potentially cause reliability issues
Regulatory (Environmental/Legal)	2	Project will have a moderate to low impact on regulatory issues
Operations and Maintenance	4	Flushing system improvements should alleviate most ongoing O&M issues
Health and Safety	4	Project will have significant positive impact on staff H&S because operators will not need to routinely enter the basin for flushing
Public Benefit	1	Project has no measurable public benefit
Financial	4	Based on total project cost of project
Efficiency and Innovation	3	Project will have a moderate positive impact on water savings; process efficiency for a more robust system and less O&M, and time and cost savings

**Risk Committee Weighted Score:** 72.30

Criteria Name	Score	Comment
Condition	1	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	4	
Health and Safety	4	
Public Benefit	1	
Financial	3	
Efficiency and Innovation	3	

**Project Title:** Baby Creek CSO Facility Influent Flushing System

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

**Phase Budget:** Wastewater

**Start Date:** 4/21/2033

**Phase Status:**

**End Date:** 12/24/2036

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
<b>GLWA Salaries</b>	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	4/21/2033	12/24/2036
Capital Delivery Salary	4/21/2033	12/24/2036

**Project Title:** Baby Creek CSO Facility Influent Flushing System

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**Phase:** Design/Engineering**Phase Title:** Design/Engineering

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**Phase Budget:** Wastewater**Start Date:** 4/21/2033**Phase Status:****End Date:** 6/23/2036**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$0.00

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**Phase Comments/Description:**

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**Cost Est. Class:****Cost Est. Source:****Cost Est. Date:****Cost Est. Prepared By:**

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**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs
Design/Engineering	\$147	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	4/21/2033	6/23/2036



**Project Title:** Baby Creek CSO Facility Influent Flushing System

**Phase:** Construction

**Phase Title:** Construction

**Phase Budget:** Wastewater

**Start Date:** 7/1/2021

**Phase Status:**

**End Date:** 12/24/2036

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** No

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	<b>Total Costs</b>	<b>Actual Costs</b>	<b>Prior FYs</b>
<b>Construction</b>	\$590	\$0	\$0

**Phase Dates**

<b>Activity Name</b>	<b>Start Date</b>	<b>End Date</b>
Construction	4/23/2035	12/24/2036
Construction - Equipment/Material Purchase	7/1/2021	7/31/2021

**Project Title:** Baby Creek CSO Facility Influent Flushing System

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**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>
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**Reporting Period 33: Ending FY21 M12 Jun**

Total Costs	Prior FYs
\$738,260	\$0

**Description of CIP Changes:**

New CIP added to Portal 7/16/21. AC

**Project Title:** Oakwood Improvements for NWI Diversion

**Project Status:** Reclassified

**CIP Type:** Project

**Class Lvl 1:** Wastewater

**Class Lvl 2:** CSO Facilities

**Class Lvl 3:** Oakwood

☐ **Project New to CIP**

- ☐ **Innovation**
- ☒ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☒ **Predecessor Project(s)**



Oakwood Aerial

**Project Engineer/Manager:** Chris Nastally

**Director:** Chris Nastally

**Managing Dept.:** CSO

**Date Original Business Case Prepared:**  
7/20/2020

**Year Project Added to CIP:** 2020

**CIP Budget:** Wastewater

**Project Jurisdiction:** City of Detroit

**Lookup Location:** Oakwood CSO Facility

**Funds and Cost Center:** Wastewater - 5421-892211

**Problem Statement:**

The Oakwood Facility Construction was completed in 2012. Over the last 8 years, the facility has been under utilized. Proposed plans for the Oakwood-Northwest diversion to Oakwood coupled with a facility assessment require improvements to ensure the facility is prepared to handle flows over those historically observed over the last 8+ years.

**Scope of Work/Project Alternatives:**

The scope of work is currently being refined under CS-299 (CSO Facilities Assessment Project). At this time, the following improvements will be planned for: The manual screening in the pump station will be replaced with a mechanically raked bar screen to reduce pump failures (currently the manual screens blind and build up head in the storm well until they are manually cleaned, causing issues with bearing submersion of the storm pumps when they are not in operation). The disinfection system will receive improvements to the chemical delivery system to increase reliability and improve automatic operation, and the storage tanks will be retrofitted with manway accesses. The sampling system will be improved to allow operators flexibility for sampling at different levels to ensure TRC is adequate prior to discharge. The screening system will receive improvements to the solids handling conveyor, compactor, and grinder systems. Various actuated gates will receive new actuator and automation improvements. The Basin drain system will be improved to handle clogging of the smaller pipes which drain to the pump station. Various improvements for maintenance will be made, such as relocating valves or equipment to areas where they

**Other Important Info:**

This project is intended to be completed plus/minus 12 months from the completion of the NWI diversion project. Given anticipated difficulties of that project, it is likely that this project will be completed much earlier than the NWI diversion. Ideally this project is to be completed before the NWI diversion to allow for proper testing/etc. needed when the NWI diversion is completed.

**Primary Driver:** 4 - O and M

**Driver Explanation:**

Many issues observed during the CS-299 Condition Assessment project are to resolve operational and maintenance issues (such as cleaning screens, or having chemical pumps that operate in an automated fashion, or access to equipment to facilitate maintenance work).

**Project Title:** Oakwood Improvements for NWI Diversion

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can be accessed for proper maintenance, or adding outlets to facilitate use of electrical equipment. Instrumentation for measuring flow and level will be replaced and programming in SCADA made to simplify automatic operation. The system operational schema will be revised to best handle the new flow source. Lastly, site drainage issues will be resolved to improve the flow of rain water away from the facility buildings.

**Project Title:** Oakwood Improvements for NWI Diversion**Scoring****Project Manager Weighted Score:** 75.30

Criteria Name	Score	Comment
Condition	4	Scores carried over from previous year
Performance (Service Level/Reliability)	3	Scores carried over from previous year
Regulatory (Environmental/Legal)	4	Scores carried over from previous year
Operations and Maintenance	4	Scores carried over from previous year
Health and Safety	2	Scores carried over from previous year
Public Benefit	5	Scores carried over from previous year
Financial	2	Scores carried over from previous year
Efficiency and Innovation	2	Scores carried over from previous year

**Risk Committee Weighted Score:** 78.40

Criteria Name	Score	Comment
Condition	4	Scores carried over from previous year
Performance (Service Level/Reliability)	4	Scores carried over from previous year
Regulatory (Environmental/Legal)	4	Scores carried over from previous year
Operations and Maintenance	4	Scores carried over from previous year
Health and Safety	3	Scores carried over from previous year
Public Benefit	5	Scores carried over from previous year
Financial	4	Scores carried over from previous year
Efficiency and Innovation	2	Scores carried over from previous year

**Project Title:** Oakwood Improvements for NWI Diversion

**Phase:** GLWA Salaries

**Phase Title:** GLWA Salaries

**Phase Budget:** Wastewater

**Start Date:** 4/27/2022

**Phase Status:**

**End Date:** 6/30/2028

**Cost Allocation:**

**Fund:** N/A - Not Applicable

**Funding Source:** Capital Funding Plan (CFP)

**Usefull Life > Yrs:** Yes

**Tot. Federal Loan Amount:** \$0.00

**Phase Comments/Description:**

**Cost Est. Class:**

**Cost Est. Source:**

**Cost Est. Date:**

**Cost Est. Prepared By:**

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>GLWA Salaries</b>	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Capital Delivery Salary	4/27/2022	6/30/2028
Capital Delivery Salary	4/27/2022	6/30/2028
Contractual Professional Services	4/27/2022	6/30/2028
Other Capital Improvement Costs	4/27/2022	6/30/2028
Capitalized Interest	4/27/2022	6/30/2028

**Project Title:** Oakwood Improvements for NWI Diversion

**Phase:** Design & Construction Assistance # 1

**Phase Title:** Study, Design, Construction Assistance

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	4/27/2022
<b>Phase Status:</b>	Future Planned New	<b>End Date:</b>	6/30/2028
<b>Cost Allocation:</b>	TBD	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

Study efforts were rolled into design for this version of CIP. This includes design and construction assistance cost allocations. Cost allocation is TBD because part of the project will be CTA and part will be 83/17.

<b>Cost Est. Class:</b> Class 4	<b>Cost Est. Source:</b> Jacobs Engineering
<b>Cost Est. Date:</b> 8/16/2020	<b>Cost Est. Prepared By:</b> Allen Gelderloos

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
<b>Design &amp; Construction Assistance # 1</b>	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Design/Engineering	4/27/2022	6/30/2025
Design/Engineering (CA)	10/24/2024	6/30/2028

**Project Title:** Oakwood Improvements for NWI Diversion

**Phase:** Construction # 1

**Phase Title:** Construction

<b>Phase Budget:</b>	Wastewater	<b>Start Date:</b>	10/24/2024
<b>Phase Status:</b>	Future Planned New	<b>End Date:</b>	6/30/2028
<b>Cost Allocation:</b>	TBD	<b>Fund:</b>	N/A - Not Applicable
<b>Funding Source:</b>	Capital Funding Plan (CFP)	<b>Usefull Life &gt; Yrs:</b>	Yes
		<b>Tot. Federal Loan Amount:</b>	\$0.00

**Phase Comments/Description:**

Construction related efforts. Cost allocation is TBD because part of the project will be CTA and part will be 83/17.

<b>Cost Est. Class:</b> Class 4	<b>Cost Est. Source:</b> Jacobs Engineering
<b>Cost Est. Date:</b> 8/16/2020	<b>Cost Est. Prepared By:</b> Allen Gelderloos

**Phase Total Expenses By FY (All figures are in \$1,000's)**

	Total Costs	Actual Costs	Prior FYs	FY25	FY26	FY27	5 Year Total	FY28+
<b>Construction # 1</b>	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Phase Dates**

Activity Name	Start Date	End Date
Construction	10/24/2024	6/30/2028



**Project Title:** Oakwood Improvements for NWI Diversion**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

<b>CIP</b>	<b>5 Year Total</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>Total</b>
2022	\$6,828	\$25	\$251	\$1,205	\$631	\$2,546	\$2,195	\$2,211	\$10,226

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<b>Total Costs</b>	<b>Prior FYs</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>5 Year Total</b>	<b>FY28+</b>
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Description of CIP Changes:**

2020-07 - New to CIP (project was previously included under the "unallocated" portion of the CSO Program 260600 in 2019 CIP Update. It was in unallocated because the scope of the work wasn't known but is now better defined mid-CS-299 completion.

5-5-2021- Reclassified this project to 270004 per the request of the PM. AC

